BACKGROUND DOCUMENTS

Prepared for the
ROYAL COMMISSION
ON THE
PRINCE EDWARD ISLAND POTATO INDUSTRY

NOVEMBER 1987

BACKGROUND DOCUMENTS

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by HP Consultants, July 1987

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Quality Issues

Prepared for the
Royal Commission on the
Prince Edward Island Potato Industry

HP Consultants
Henry Phillips

July 1987

1. INTRODUCTION

The P.E.I. potato industry presently produces approximately 70,000 acres of potatoes compared to 51,600 acres in 1976. In production terms, such a marked increase has caused this commodity to outstrip its nearest competition. However, since the potato crop takes its toll on the soil, the industry is approaching its maximum limit of production. The question consequently arises, Can we maintain this level?

This assignment has been approached on the premise that the industry has a perceived quality advantage and, in order to maintain its levels, it must ensure that this perception by the consumer is, in fact, a reality.

This means, therefore, that the quality issues assigned for study must always surpass the competition. If not, reality and perception will quickly meet, resulting in a decrease of the market and a severe blow to our already fragile economy.

2. QUALITY ISSUES

- INSPECTION AND RESTRAINT (Section 4):

  Evaluate the effectiveness of inspection services with particular emphasis on restraint.

- QUALITY ENHANCEMENT (Section 5):

  Identify ways to help ensure that a quality product is placed on the market.

- CLIMATE-CONTROLLED STORAGE (Section 6):

  Identify the need for more climate-controlled storage facilities, particularly for processing in the Prince County area, and for the tablestock market in general.

- STORAGE SHARING (Section 7):

  Evaluate the appropriateness of more concentration in storage and grading facilities, with a view to styling any capital assistance programs towards encouraging joint ventures in storage and grading facilities.

- As part of Sections 6 and 7, identify appropriate storage facilities in both processing and tablestock sectors, which would extend the marketing life of potatoes.

3. METHODOLOGY

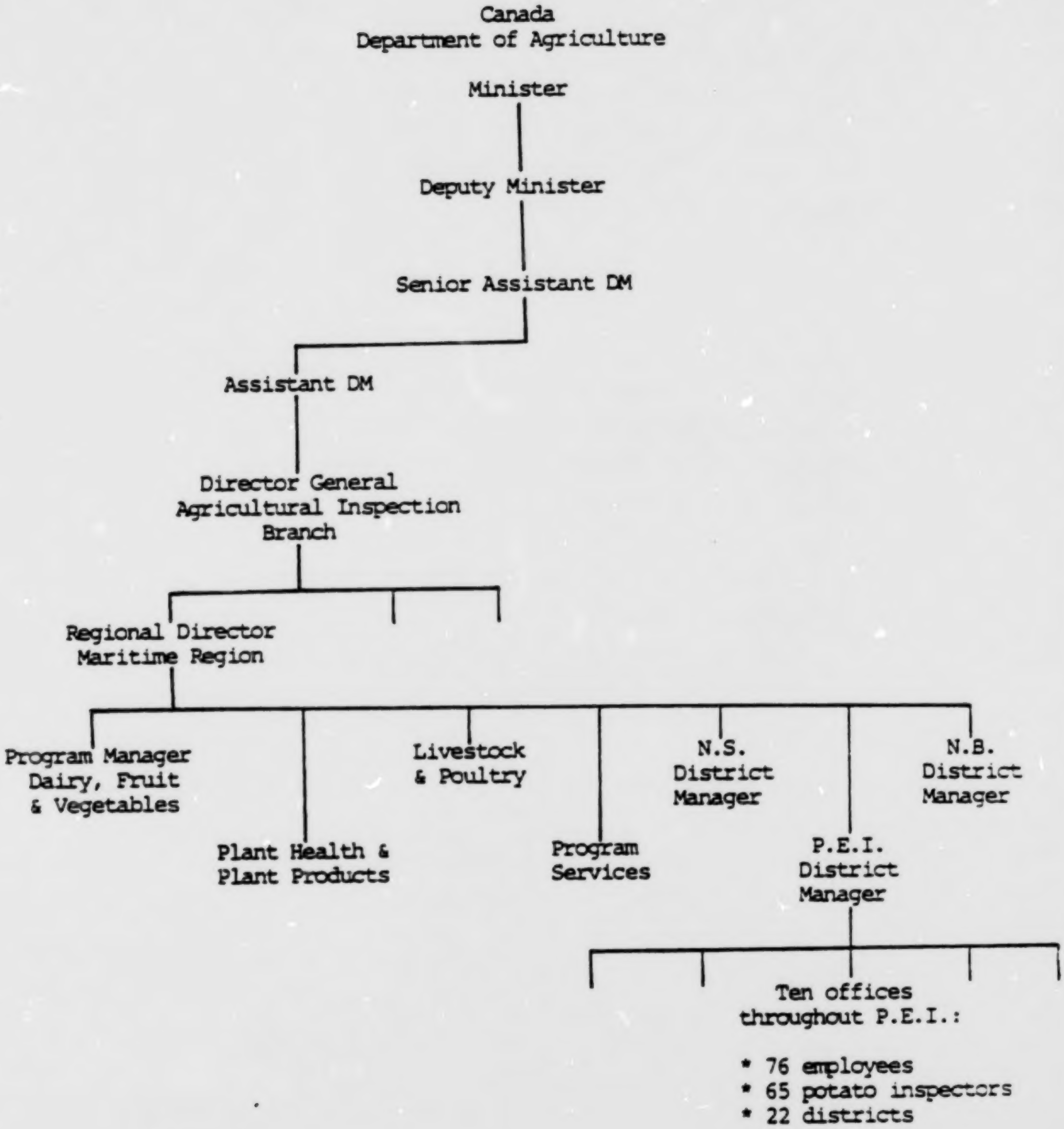
In order to address the quality issues outlined in the assignment, the following measures were taken:

(a) All the written material provided by the Commission, Provincial and Federal governments, Industry and interested individuals was reviewed.

(b) Access was obtained to previous studies relating to storage, tablestock potato marketing, inspection, disease control, etc. In particular, reports compiled for Agriculture Canada as well as statistics from its Inspection Branch were drawn upon.

(c) Approximately two dozen individuals were interviewed, including producers, dealers, government officials, Industry officials, processors and marketing specialists.

4. INSPECTION AND RESTRAINT


Canada
Department of Agriculture
Minister
Deputy Minister
Senior Assistant DM
Assistant DM
Director General
Agricultural Inspection
Branch
Regional Director
Maritime Region
Program Manager
Dairy, Fruit
& Vegetables
Plant Health &
Plant Products
Livestock
& Poultry
Program
Services
N.S.
District
Manager
P.E.I.
District
Manager
N.B.
District
Manager
Ten offices
throughout P.E.I.:
* 76 employees
* 65 potato inspectors
* 22 districts

Prince Edward Island is the largest seed producing area in North America. At present, over 80% of the total acreage is inspected as seed every year. This figure is expected to rise to 100% over the next few years as a result of amendments by the Provincial government to the Plant Disease Eradication Act. This Act requires that every potato farmer plant a minimum of 10% Foundation Class or better seed for each variety of potato planted, and that applications for inspection be mandatory for this seed.

At present, the Agricultural Inspection Branch has 76 employees working on P.E.I., covering 6 major commodities. They operate from 10 offices and 22 inspection districts across the province. Their mandate is to enforce the Canadian Agricultural Product Standards Act, the Seeds Act and the provincial Plant Disease Eradication Act. Approximately 65 employees are involved in potato inspection.

The procedure for inspection of seed potatoes is as follows:

1. Field Inspection: twice annually for Foundation Seed; three times for Elite Seed, and once for Certified Seed.

2. Bin Harvest Inspection: during or just after harvest.

3. Tuber Inspection: once annually at warehouse, and twice annually at wharf.

To a certain extent, the fact that farmers grow for seed ensures a high quality of table potatoes at the beginning. Since this assignment is required to deal with table potatoes, it is important to be aware that there is a justifiable reason for the perception that P.E.I. grows the highest quality potatoes.

In previous years, marketers of table potatoes were required to apply for Federal Inspection; now, Federal Standards have to be met. This change came about as a result of restructuring in the Inspection Branch in 1979 - in P.E.I., six districts were amalgamated and cross-utilization of staff was introduced. According to the Inspection Branch, inspection is now only an assurance, not a guarantee, of quality.

In the past, the seed potato grower was accorded a level of respect in the community similar to that given to a teacher or physician. The inspectors came to know the growers in the areas to which they were assigned and this association was often built up and maintained over a period of many years. The inspector knew which growing operations needed to be more closely monitored and, accordingly, spent more time in those areas. The inspectors reported to supervisors who were themselves experienced and knowledgeable in potato production. The chain of command was very short during that period. When problems had to be solved, they were routinely put forward by the Inspection Branch since theirs was also a leadership role.

In the late 1970's, the popular terminology of restraint was "user pay"; in the present day, it is "cost recovery". Whatever the term used, the results have been the same: a decrease of approximately 10 - 12 employees since 1980, of whom 50% were said to be in supervisory positions, and the cross-utilization of staff. This has occurred despite the fact that the potato acreage in P.E.I. has increased substantially. In addition, shipments by rail have decreased and shipments by truck have increased. This has resulted in a major adjustment by employees as it is much easier to inspect rail cars, which run to set schedules, than trucks, which travel at any time of day or night. A bad load, however, can be more easily detected on a truck.

In 1944 there were approximately 6,700 seed potato growers, monitored by the same number of inspectors as are available today. The structural changes were not accomplished without difficulties, however. Cross-utilization has apparently caused a significant decrease in morale. 30% of the present inspectors are interchangeable between table and seed potato inspection. Some inspectors can even interchange between potato and meat inspection. Clearly, such a dramatic change would be disturbing to many inspectors and there would be a move away from commodity loyalty.

At present, table potatoes are not necessarily inspected unless they are being exported out of Canada. The largest portion of table potatoes goes to Ontario in the form of count packs, bulk, 50 lb. bags, etc. According to Agriculture Canada, there are 52 registered warehouses in P.E.I. which are spot-checked approximately twice a week, although one warehouse manager indicated that he could not remember when a load from his warehouse was ever inspected. Most loads at unregistered warehouses are, however, inspected.

There are many occasions when inspectors cannot or do not have time to be present because they must carry out mandatory inspection of exports. On those occasions, they issue a "Y" Release. During the past few years, a significant number of these releases have been issued because of the Livestock Diversion program and, this year, because of heavy exports to the United States.

(a) Amount of table stock shipped in cwt.:

1984-85	1985-86	1986-87
8,098,523	5,934,298	8,623,839

(b) Amount inspected in cwt.:

1984-85	1985-86	1986-87
5,158,771	3,449,193	4,471,092

(c) Amount shipped on "Y" Certificate in cwt.:

1984-85	1985-86	1986-87
941,904	308,098	915,766
*(369,351)	*(215,669)	*(595,248)

* shipped on "Y" Certificate because no inspection available.

Source: Agriculture Canada Inspection Branch.

There is no doubt that restraint has had its effect on the table potato industry in P.E.I. The restructuring has thrown the onus on the Industry to police itself. Even with mandatory inspection, there would be insufficient personnel to guarantee 100% success. The move by the federal government resulted from the climate of restraint, rather than from the Industry being ready to carry the mantle.

It is also evident that the leadership provided by the inspectors in the past has vanished and that the Industry is, in fact, on its own. The background of the present leadership is in fruit and vegetables. This may not in itself be significant, but in a restructuring period it encourages the perception that the Industry is vulnerable to less support than in the past and may be considered less important. Most of the producers interviewed felt that the inspectors had lost the old spirit; for instance, greater strictness is now practiced with regard to the amount of notice expected to be given for inspection appointments. On the other hand, inspectors have to work within their system and the present system, which reacted to the climate of financial restraint, was not able to counteract the negative effects these changes brought about on the inspectors themselves.

In my opinion, restraint measures have had a marked effect on the chances of lesser quality table potatoes reaching the market place in Canada. However, restraint has only emphasized the weaknesses that already existed with the Industry: collective leadership, attitude toward quality, and Elite seed quality.

The introduction of inspection fees has caused a great deal of concern within the Industry, which feels discriminated against because it has to export its produce while Ontario, for instance, ships within its own province without any charge.

This, coupled with the restructuring within the Inspection Branch, has had a double-barrelled effect - the Industry is not only receiving reduced service, but is now having to pay for it. The Industry obviously wants inspection services, but there remains to be decided whether the Industry should absorb part of the cost directly or have it come out of general tax revenue as has been done in the past.

At present, the inspection fee for table potatoes is 3¢ per cwt. with an increase, due April 1, 1987, to 6¢ per cwt. The objective was to work the fees up to 15¢ per cwt. by 1990. Seed inspection can be carried out on the basis of $12.50 per hectare (2.5 acres), or $5.00 per acre, or 5¢ per cwt. on actual inspection of tubers. Whatever option is chosen, the decision has to be made by October 1 each year. Only about 100 farmers choose the hectare option, the remainder being divided between the 3¢ per cwt. and 5¢ per cwt. options.

Registered warehouses can pay $500 per year and no inspection fees. If they do this, a registered number is issued to them, but certain procedures and requirements have to be met.

It should be relaized that the Inspection Branch spends over $250,000 per year to send samples for testing in Florida. Last year, for instance, over 900 post-harvest samples were sent for virus reading. This is important for the farmer since many buyers from all over North America wait for the publishing of the readings before purchasing their seed.

Recommendations

(1) That mandatory inspections should be carried out for all seed and table potatoes.

(2) That the Industry and both levels of government should evaluate the inspection service with the objective of setting up a separate service for potatoes; this is not to suggest a return to the old system but, rather, to locate the best level from which to give support to the Industry.

(3) That there should be less cross-utilization of staff within the Inspection Branch.

(4) That the federal Department of Agriculture should re-design its organizational structure and lines of authority in order to respond more flexibly to the problems the Industry is faced with.

(5) That a stronger system of policing and penalties be worked out between the Industry and the Inspection Branch.

5. QUALITY ENHANCEMENT

1. Elite Seed Growers

The most crucial element of the P.E.I. potato industry is the quality of the Elite seed. P.E.I. does have a good reputation, but in recent times the standards for Elite seed growers in other regions have surpassed those in P.E.I. The Foundation growers are dependent on the Elite seed growers, but have very little recourse for effecting improvements. It is evident that our expectations of each Elite seed farmer must be raised and regulations set in place to ensure excellence.

2. Mandatory Inspection

The mandatory inspection of all seed and table potatoes is imperative for an Industry which is unable to police itself adequately. It is evident that every bag of potatoes cannot be inspected and that there are still many ways to beat the system; nonetheless, inspection is vital to the protection of the Industry and also the consumer.

3. Attitude

Attitude plays an important part in the quality of potato sent to the market. There are many steps involved in growing, grading, packaging and marketing potatoes. There is no doubt that quality will play the largest part in the future for any farmer trying to survive and prosper in a continually competitive market.

The Industry must clearly design ways to motivate the farmer to develop this attitude towards excellence. In many cases, this has already been achieved but, given the problems in the Industry, evidence still shows the persistence of old practices and old ways.

One method of delivering the Quality message is the production of a videotape showing consumers receiving P.E.I. potatoes which are below standard. This might be aired on TV during shipping season. There are many other ways to effect attitudinal change. The Industry might also promote "packing premium" rather than "packing minimum".

4. Consistency

Over the years, the product has varied in the quality sent to the market-place. This variance has depended to some extent on exports, weather or price, but most of all to the lack of interest in producing and shipping a consistent quality product.

We can, however, rise to the occasion when circumstances warrant. This was illustrated when the United States began inspecting our product at the border. As their inspections became more strict, so we began shipping potatoes that were premium or better than Canada No. 1 grade. What was at first considered an inconvenience may, in fact, turn out to be a stimulus to our share of the United States market.

Another example of the Industry's inconsistency is the use of the Maine Bruise test. Process farmers use the test as it results in less dockage; however, table potato farmers do not use it to any great extent.

5. Storage

Good storage has always been an important facet of our potato industry, but never as crucial as it is in today's competitive market-place. Research in the past decade has taught us that good climate-controlled storage can not only extend the season, but also help to retain quality. These differences are quite evident on the shelves of local stores in April, May and June.

Surveys which have been taken give quantitative evidence that the Industry's standards are too low for the quality required but that the pay-back, if changes are made, is only two years. Some recent evidence indicates that a local firm specializing in through-the-pile ventilation systems sold more of them in Maine last year than in P.E.I. It is information such as this which tells the real story about the Industry's competition.

6. Market Protection

Since P.E.I.'s largest table market is the Toronto area, it would be prudent for government and Industry to protect the quality of potatoes sold. In 1983 the Longwoods Research Group Ltd. conducted a study The In-house Consumption of Table Potatoes in Central and Eastern Canada. The study clearly indicated that the consumer's paramount concern was spoilage. Shoppers looked to avoid spoiled potatoes and also felt the potatoes for firmness.

In addition, the study found that P.E.I. potatoes had an excellent reputation; however, preference levels diminished with the consumer's age. They were higher among the over-75 age group and lower for those aged 25 - 35. This information does point to the Industry's potential vulnerability in future years in this market.

I would suggest that the P.E.I. potato industry ensure a presence in that market by covering inspection, consumer information, policing, etc. Obviously, such a position would not bring results unless it had the teeth to react. Therefore, such initiative would have to be coupled with penalties and policing action by the Industry.

7. Preventive Education

In order to enhance the quality of tablestock potatoes, a preventive education process could be very valuable to the Industry. Any time bad things can be prevented from happening, there will be benefit. This process could be either structured or unstructured, but both ways could convey a very valuable message.

The consensus of those interviewed was that a great deal of time has been spent on the disease aspect of the Industry, but very little on the quality aspect, such as harvesting, grading, storage, etc. In order to convey a strong and effective message, such an educational campaign would have to be organized and carried out by the dealers, who "wield the stick" and who know what can be accomplished.

8. Consumer Feedback

Any commodity industry in today's market requires sophisticated feedback to ensure it is giving the market the quality demanded and it can read accordingly far enough in advance. As the Longwoods Research Group study indicated (quoted under Market Protection), the Industry is losing some ground among the younger age group. It is only through feedback from the consumer that an improvement can be effected.

There are many other ways to hear from the consumer. One method might be to send self-addressed, stamped cards in every bag of potatoes. If each card was coded with a number representing the grower, and if mandatory inspection was in place, it could be very effective. Such cards would have to be sent to a third party, which would be tied into a penalty mechanism. This could be, for all intents and purposes, a guarantee of quality.

9. Bulk Shipping

Since a number of potatoes are sent away from P.E.I. for processing and/or repacking, growers do not know what the final destination is or in what form the potatoes will be presented to the consumer.

I feel it is in the best interest of the Industry to ensure quality to the consumer. If the Industry is convinced of this, it should become informed about who does the repacking and how the goods are handled and packed. It is bad enough to lose the added value of the product, without also having this loss affect our reputation. I would suggest that the repacking companies be approved and registered by the Industry and that the Agricultural Inspection Branch in other provinces assist the Industry in this effort. It would be worthwhile for the Provincial government to pay for this service as the stakes are too high to take chances.

10. Higher Standards

P.E.I. could move to standards that are higher than Canada No. 1 grade, which they are effectively doing in order to access the United States markets. They could, for instance, move down to 8% defects from the standard 10%. An alternative to this is to institute a "premium brand" which is apparently already in use in New Brunswick.

As indicated, proper storage can lower total culls and can improve quality, thus when culls are reduced to a manageable level of 10%, it becomes practical without sacrifice and money. It is therefore very practical to further enhance our reputation and thus protect our markets.

11. Inspection

Refer to recommendations at the end of Section 4 - INSPECTION AND RESTRAINT.

12. Strategic Plan

The industry seems to be void of a strategic plan and there is a perceived or real lack of leadership. It is important to be well-researched and to have agreed upon a direction for the 1990's. If the Industry does not know where it is going, how is it going to get there?

Lack of strategic planning is not, of course, unusual but if planning can be accomplished it will send signals to all concerned on how to plan for their place in the Industry. This will lead collectively to a stronger, more vibrant industry with a sense of purpose.

13. Information Base

This assignment was made more difficult by the inability to be able to quantify answers to my satisfaction, particularly with regard to the type and quality of storage, consumer feedback figures, etc. Updated information about everything that concerns the Industry would undoubtedly lead to more effective planning and decision-making. This would also apply to the management of diseases such as ring-rot where, currently, it is often difficult to establish the source of the disease when a case is discovered. In this instance, a survey is clearly necessary to assist in finding answers.

14. Research

The word "research" conjures up the thought of an unlimited amount of work and the spending of an unlimited amount of money. However, it can be very directed and very effective. Such is the case with the applied research at the Industry Elite Seed Farm on Fox Island. Unfortunately, the problems with the potatoes are wide and varied. Since P.E.I. grows less than ½% of the world's potatoes, the province is unable to carry the whole research load on its shoulders.

We can, however, do our share and give more support, for example, to research on the eradication of ring-rot. Many think this disease will hound us for many more years to come, but with the advancement being made now, a stepped-up effort could be fruitful.

Basic research into potato varieties could be beneficial since there is, at present, no collective effort to consolidate our views on acceptable varieties. One example for research might be early potato varieties, such as the Superior which, if kept too long, becomes unacceptable in taste.

15. Penalties

From my preliminary observations, an improved system of checks and balances will have to be established in the Industry. It is true that the market place itself acts in this capacity, but not until it has taken its toil on the consumer.

If standards are set but not followed, the Industry or government should act with firmness. There seems to be always an escape route when bad quality produce gets through to the market place. One approach to closing off such a route would be a "trademark of excellence" which would have to be earned and which would be taken away if the standard of the product dropped.

16. Varieties

The Industry should work towards introducing new varieties which meet today's demanding consumer tastes. Many of those varieties grown in Europe could be grown in P.E.I. and may be more disease-resistent. New varieties might result in better quality levels.

6. CLIMATE-CONTROLLED STORAGE

The lonely potato is a living plant made up of 85% water. Specialists in the Industry believe that present storage facilities allow a 10-15% shrinkage factor. It is estimated that, with proper storage, this figure could be reduced to a 1-5% loss of water in a tuber. Proper storage slows the breakdown from starch to sugar, resulting in a much firmer and higher quality potato.

Based on shipments (tablestock) of 8.6 m cwt. in 1986-87, a drop in shrinkage of 4% over the next five years would result in weight and size enhancement of 336,000 cwt. At an average price of $5.00 per cwt., there would be a gain of 1.68 million dollars. Most important of all, however, is the fact that this will result in a better quality product, thus enabling P.E.I. to retain its competitive edge in the market.

The pay-back for any farmer moving to proper climate-controlled storage can be as low as 2 years. The question then is, Why are the farmers not flocking to the well and making the necessary adjustments? The stumbling-block is the capital cost in addition to which the farmers have to be convinced that improved storage will improve their fortunes.

During the past 15 years, there have been programs to encourage farmers to improve the quality of storage. One such program started in 1973 was the National Fruit and Vegetable Storage Program whereby farmers received a 33 1/3% capital grant on costs which the department thought to be eligible. The program now only has approximately $700,000 nationally which has effectively brought it to a halt. Since its inception, only 4 or 5 farmers have taken advantage of the program. It has had limited funds for 2 years and has a capital of $100,000.

Later came the Family Farm grants under the P.E.I. Comprehensive Development Plan, which consisted of up to 50% capital grant money. This improved the storage quality of potatoes but standards were still not high. Presently, there is a program in place under the E.R.D.A. Agriculture Sub-agreement. In this program 1/3 is given on environmental systems, such as through-pile ventilation systems and humidity control. This program has been going since 1984 and has assisted approximately 50 - 55 farmers. The total cost has been around half a million dollars.

In order to identify the need for more climate-controlled storage (non-refrigerated), it is necessary to try and quantify the number and type of storage facilities presently in operation. The last detailed study of storage was the Potato Storage Facility Inventory Survey of P.E.I. completed as a summer youth employment project in 1980. The results of this study of 633 storage operators (100% sample at that time) was validated by the results of a sample survey conducted by Price Waterhouse in their Study of the P.E.I. Potato Industry of Prince Edward Island (1983). Some of the results of the 1980 Survey are as follows:

- Average no. of facilities per farm: 1.63

	Total	%
(1) Singularly used	482	76.5
(2) Used by more than one grower	151	23.5

"Singularly used" means that facility which stores potatoes for one potato operation only. Thus, family farms fell under this category as did partnerships.

If more than one farm operation employed the services of a storage facility, it fell under the latter category.

- Age of facility:

	Total	%
Over 50 years	170	16.6
26 - 50 years	68	6.6
16 - 25 years	132	12.9
6 - 15 years	345	33.7
0 - 5 years	309	30.2

- Storage capacity of the Industry on P.E.I.: 16,963,706 cwt.

- Average storage capacity per facility: 13,083.9 cwt.

- Average height of pile: 10.7 ft.

	Total	%
(1) Bulk storage	1008	98.4
(2) Other	16	1.6

- Structure:

	Total	%
(1) Above-ground wood frame	308	30.1
(2) Braced rafter	100	9.8
(3) Curved frameless steel culvert	219	21.4
(4) Wood-laminated arch	39	3.8
(5) Pre-engineered steel frame	26	2.5
(6) Earth bank storage	107	10.4
(7) House basement	219	21.4
(8) Other	6	.6

- Average R-value per facility for walls: 16 (approx.)

- Average R-value per facility for ceilings: 35 (approx.)

- Ventilation systems:

	Total	%
(1) Proportioning damper	62	5.5
(2) Exhaust fan system	659	59.3
(3) Plastic tubes	60	5.3
(4) Other (hatches, circulation fans)	183	16.5
(5) None	148	13.4

- Humidification systems:

	Total	%
(1) Yes	18	1.8
(2) No	1006	98.2

- Heater systems (excluding house basements):

	Total	%
(1) Permanent installed furnace	150	18.6
(2) Thermostat controlled	407	50.6
(3) Non-thermostat controlled	65	8.1
(4) Other	5	.6
(5) None	178	22.1

- Refrigeration systems:

	Total	%
(1) Yes	3	.3
(2) No	1021	99.7

- Opinions of farmers on their own facility:

Condition	Total	%
(1) Excellent	204	19.9
(2) Good	695	67.9
(3) Fair	121	11.8
(4) Poor	4	.4
(5) Unfit	0	.0

° Opinions of farmers on public storage:

	Total	%
(1) In favour	173	27.4
(2) Against	416	66.1
(3) No answer	41	6.5

° No. of farmers willing to invest: 71 (11.2%)

° No. of acres planted in 1980:

(1) Total	55,669
(2) Average per farm	88.3

This particular study confirms the present thinking that the Industry needs better, or climate-controlled storage. This will not only extend the season but retain the quality of the product.

Today the standards are much higher and, of course, more expensive to maintain. Through-the-pile ventilation is the standard method today and costs between 15-20,000 dollars on storage space of 40 ft. x 100 ft. Humidifying equipment is much cheaper. On the other hand, insulation requirements have risen. Ten years ago, R-20 was standard for ceilings; now it is R-40. For walls, the R-value is now expected to be 30.

The Storage Study referred to above, even though completed in 1980, quantifies the opinions of many in the Industry. This, coupled with the take-up in government programs since 1980, convinces me that more climate-controlled storage is needed in the near future. The competition is never far behind so that providing this new storage is imperative. One of the problems is that so many of our facilities are old and thus difficult to renovate to today's standards.

In Prince County, approximately 2/3 of the farmers who grow for Cavendish Farms have climate-controlled storage (non-refrigerated), and another 1/3 have through-pile ventilation. Since Cavendish Farms is in such a highly competitive market, Quality and Price are everything if they wish to survive. At present, they are running 3 shifts per day for 5 days per week with only a 2-week maintenance shut-down. However, they are changing their lines to increase capacity, which will mean priority refrigerated storage for themselves even though it is important to have the remainder of their farmers move to better quality storage as well.

At present, Cavendish Farms can store approximately 50 million lbs. of potatoes in their own facility which consists of 4 bins. The remainder of their production requirement is stored on-farm. Cavendish Farms do not touch these potatoes until the middle of June when the potatoes on-farm are used up or are below quality specifications. They feel that, in order to meet their production requirement during the warmer season, they will require refrigerated storage for another 25 million lbs. in the next few years.

Cavendish Farms store about 30 million lbs. of their own potatoes and 20 million lbs. from selected growers. Their past experience dictates that they are unable to store a large mix of potatoes from 30 or 40 farmers without having difficulties, so they only store potatoes from selected farmers whom they monitor very closely during the growing and harvesting periods.

In order to reach this 25 million lbs. objective, Cavendish Farms are in a bind since they cannot grow any more acres owing to the existing land legislation. However, they seem prepared to work with the farmer and with governments to work out a compromise which would place refrigerated storage on a few farms. This could take the form of a bonus program by Cavendish Farms, coupled with a 1/3 capital grant program by the governments.

Recommendations

(1) That more refrigerated storage be added to the Prince County area in order to assist the farmers to take advantage of the increased capacity at Cavendish Farms.

(2) That the climate-controlled storage in the Prince County area be improved.

(3) That the climate-controlled storage for tablestock potatoes be given top priority with respect to improving quality, not capacity. This will require a new generation of storage facilities.

7. STORAGE SHARING

The best storage is the most cost-effective blend of features to produce a top-performing, long life, minimum maintenance structure, combined with a system which minimizes losses. Weight loss in storage may not be visible; however, a good system has the capability to preserve all the quality possible even when a marginal year comes along, and has the flexibility necessary to truly minimize losses.

Losses in storage are two-fold: weight and quality loss. Weight loss cannot be seen but can be understood. Quality loss includes loss of quality due to rot, peel, trim, sugar, sprouts, flattening, shrivelling, etc. A recent quote by Mr. Bob Hesse, Director of Research and Development at Suberizer Inc., a firm noted for design and manufacture of potato storage systems, states:

> "Authorities agree that quality losses are directly related to weight loss and the two categories have roughly the same order of magnitude. For example, a 4% weight loss normally combines with quality losses of an additional 4%, for a total loss of 8%."

We must remember that the Industry's cullage rate has averaged between 20 - 28% over the past 7 years; however, the answer to lowering this figure is not only in alternate uses, such as dehydration plants, starch extraction, potato flakes, etc., but basically with the Industry itself. It is estimated that normal shrinkage is 10 - 15% which, with proper storage, can be reduced to 1 - 5%. The cost benefit is staggering and warrants a great deal of concentration by the Industry and governments in the next few years.

When one evaluates the Potato Storage Facility Inventory Survey of Prince Edward Island of 1980, one finds a comment from the author:

> "If there is a well-defined, specific characteristic of the P.E.I. farmer, it is that the farmer is very independent in daily operations of the business at hand."

This comment is supported partly by the study's question, How do you feel about public storage?:

		Total	%
(1)	In favour	173	27.4
(2)	Against	416	66.1
(3)	No answer	41	6.5

The above figures show that concentration of storage is favoured by 27.4% of those interviewed. My original impression from those farmers whom I interviewed myself was of a much lesser figure. The question posed was, of course, very broad and many interpretations could be given of it. However, we do know that many of the warehouses are old and well below the standard to ensure quality and, ultimately, to ensure they stay in the business.

The 1980 survey also shows that 151 of 163 farmers employed the services of a storage facility. In fact, some individuals have built storage facilities on speculation and have had no trouble leasing them. Clearly, there is a small segment of farmers who feel that leasing facilities is acceptable to them, as well as sharing facilities.

There seems to be agreement that it costs approximately $1.25 per 50 lb. bag of potatoes to prepare them for the market. This includes grading equipment, packaging, etc. Such an expense is causing many farmers to store only in bulk and to ship to a grading and packing plant, a trend which is expected to continue.

Given all the functions involved in assembling, storing, grading, packing and distributing, which must be performed to meet technical and market requirements, and the fact that we do not set the price, it is important to look at the scale of an operation which will minimize the costs. Thus, an extension of this thinking suggests the value of concentration storage efforts. It is virtually impossible to look at the economies of such concentration in comparative terms, unless the estimates are available on the sizes to be compared. The only study I was able to locate directly on the subject was carried out in the 1970's and taken from a government internal study. This concerned the Red River Valley area in Minnesota and indicated that most economies of scale in storage, grading and packing of potatoes in 100 lb. bags for table market were realized at capacities of 400,000 bushels with a packing rate of 450 - 550 cwt. per hour. The cost differential in plants of this size and those of 42,000 cwt. capacity was about 13¢ per cwt. Beyond some minimum volume for each size of plant, the cost of packing represents the largest element of variable (operating) cost. Since package costs are the same for each unit packed, most of the economies of size in the Minnesota study are attributable to more efficient use of overhead. For example, fixed costs of storage declined from 12.7¢ per cwt. at 42,000 cwt. capacity to 7.98¢ per cwt. at 400,000 bushels capacity. Fixed costs of packing equipment declined 3.63¢ per cwt. to 81¢ per cwt. over the same size range.

While this study is obviously out-of-date, it does point out the principles of economies of scale. If common sense were applied to the problem, it would be clear that it would be cheaper to build one 20,000 sq. ft. storage facility than 5 facilities at 4,000 sq. ft. each. The savings come from the reduced number of outside walls needing insulation and siding. In addition, the building would need only one electrical system, one through-the-pile ventilation system, one heating system, etc.

The economies of scale are at work within the Industry every day, such as is the case with the number of acres which should be grown to reach maximum efficiency. Today's figure is 135 acres. Once a farmer puts more than that into production, it becomes necessary to invest in new equipment. Thus concentration makes sense from a cost point of view; however, there are also many constraints along this route.

Positive factors (leased storage)

(1) Cost savings (fixed costs)
(2) No capital outlay if leasing
(3) Maintenance costs included in fee

Negative factors

(1) Possibility of disease (even though each farmer has separate bins)
(2) Timing (everyone wants to grade at the same time)
(3) Knowledge of each other's market potential

Recommendations

(1) That, as the evidence supports, the appropriateness of more concentration of storage be explored.

(2) That at least 2 or 3 new climate-controlled storage facilities be built by government, based on a shared concept.

(3) That the storage facilities be provided to the farmers on a lease basis, based on a charge per cwt. stored.

(4) That these facilities would be part of a demonstration project, thus allowing for accurate data to be collected on the cost benefit in comparison with present-day storage.

(5) That this project would be best suited for table farmers and process farmers, but should not exclude seed farmers. These farmers should use the same dealer in order to lower risks.

Background Document No. 2:

Feasibility of a Producers Company

Prepared for the
Royal Commission on the
Prince Edward Island Potato Industry

HP Consultants
Henry Phillips

July 1987

FEASIBILITY OF A PRODUCERS COMPANY

There are several possible ways in which a business entity can be legally organized for the purpose of marketing Prince Edward Island potatoes. These options are:

(1) An incorporated private company
(2) A crown corporation
(3) An incorporated non-profit company
(4) A partnership arrangement
(5) A co-operative arrangement.

Each of these entities has advantages and disadvantages, some of which will be discussed later in this analysis.

For present purposes, some basic assumptions have been made which eliminate from consideration all but one of the above options. These assumptions are:

(1) Potato growers must be involved in a direct ownership and management capacity in the business.

(2) It must be self-sustaining over the long haul so as to be able to survive the up-and-down cycle of prices normally encountered in the marketing of potatoes from year to year.

(3) It should operate on a "profit motive" basis.

(4) Crown ownership is not to be considered but public monies may be invested in it.

(5) It should be as easy as possible for growers to invest in, so as to attract as broad a base of shareholders as possible.

(6) It has to be able to compete with other entities which are marketing potatoes on Prince Edward Island.

Based on these assumptions, all options have been eliminated except for Option 1: Incorporated private company.

A private company can easily be incorporated under the P.E.I. Companies Act. The annual operating costs for such a company would be approximately $125,000, assuming that it was solely in the table potato market and that it hired a professional manager on salary (see Appendix A). It should have a working capital base of at least three times the operating costs i.e. $375,000. To achieve this on a most reasonable and equitable basis, it would be necessary to have both grower and government investment; one must remember that government has made loans to many dealer companies on P.E.I. in the past.

SHARE STRUCTURE (COMMON SHARES)

It should be intended that the growers/producers will own and operate the company. In order to achieve this, there should be a class of shares - common shares - which would hold all the voting and controlling rights in the company. Whether the shares would pay dividends as well would be up to the shareholders and the Board of Directors.

There are a number of ways in which the common shares could be structured so as to achieve the desired results, such as, by issuing 125,000 common shares authorized when the company is incorporated, with a par value of $1.00 each. This would allow a farmer into the business for one dollar. The number of shares can be increased at any time by the Board of Directors with the approval of the shareholders. Shares should be offered on a subscription basis to all growers, with a limit of 5% of all authorized common shares for any one grower. If more than the 125,000 shares are subscribed for, either more shares can be authorized or the existing shares sold on a pro rata basis i.e. if twice as many shares are subscribed for as was authorized, each subscriber would only receive one half of the number they applied for.

An alternative method, when incorporated, of acquiring more capital with fewer farmers at the outset is to issue shares at a par value of $1,000. Sufficient shares are authorized to cover all farmers on P.E.I., with no farmer allowed to buy more than 5 shares or to invest more than $5,000. If 3,000 shares were authorized, then each farmer would be allowed to purchase only 5 shares.

It is very important to set a limit on the ownership of the voting shares so as to disperse ownership and prevent a small group of shareholders from gaining control of the company. Even with a 5% limit, it would only take ten growers, each with a limit of 5%, to control the company. The limit could be lower to prevent this from happening or a fixed number of shares could be set.

In order to fully capitalize the company, it is suggested that 250 preferred shares with a par value of $1,000 be authorized. The government (federal or provincial) might purchase these shares, which would be non-voting and would pay no dividends, but would pay interest at the bank prime rate and be redeemable at the option of the company for par value. An alternative to the issuance of preferred shares would be for the company to issue bonds. In addition to preferred shares, the government might guarantee loans to those wishing to buy common shares in the company.

ORGANIZATION

The company would be organized with a standard set of by-laws (see Appendix B). A Board of Directors, equal to 10% of the total number of shareholders and with a maximum of 15 members, would be elected annually. The Board sets policy; the staff manages the company and carries out that policy. The Board should meet quarterly throughout the year. Between Board meetings an Executive, consisting of the Chairman of the Board, the President, the Vice-President and the Secretary-Treasurer, will act and report their actions to the next Board meeting for ratification.

OPERATION

The company should purchase and sell potatoes on an open and free market. It should not act as a potato bank, but be free to purchase from any grower whether they are shareholders for the company or not.

FINANCING

The annual operating costs of the company should be derived from a surcharge, e.g. 50¢ per cwt. Some 250,000 cwt. of potatoes would have to be sold to yield $125,000. The shareholders would also have to agree on the establishment of a "reserve fund" which could form part of retained earnings or a sinking fund to retire the preferred shares. The fund would be invested in easily liquidated securities. Its main purpose would be to ensure the solvency of the company.

A bonus system should also be established for each grower who sells potatoes to the company, whether a shareholder or not. The system should be able to take into account the quality or quantity of potatoes purchased so that a pro rata bonus can be paid out at the end of the marketing year from the average profits accrued from all sales. This bonus should only be payable after allowance is made for all operating costs, reserve funds and dividends declared payable on the common shares.

In order for this potato marketing company to be financially viable, it must market a minimum quantity of potatoes each year. As already mentioned, a surcharge of 50¢ per cwt. would mean that only 250,000 cwt. of potatoes would have to be sold. When one considers that over 8 m. cwt. of tablestock potatoes leave P.E.I. every year, this amount is modest.

ADVANTAGES

The main advantage of forming a privately incorporated company is the limited liability provided to the staff, directors and shareholders in the event that the company becomes insolvent. In addition, a wide variety of shares can be issued, the advantage of which is that an investor such as the provincial government can buy into the company and even get its money back, without having to be responsible for the company or its management.

MARKETS SERVED

At the outset it would be prudent for such a company to deal only in table potatoes in the North American market. Once the company is established in the Industry and has assessed its management capability, it may wish to move on to the seed market.

The reason for this is that the seed market is exceptionally risky; however, in order to establish a larger share of the table potato market, it will be necessary to go into the seed market. If seed growers cannot sell their seed through this company, why would they sell their tablestock?

LOCATION

This is not of prime importance, although a location between Charlottetown and Summerside would be convenient.

CONSTRAINTS AND PROBLEMS

It should be remembered that farmers have previously started companies of the type proposed; however, it is unusual for them to hire a professional manager, but rather to collectively choose one of themselves to be the dealer on their own behalf. These ventures were also undercapitalized and occupied a very minor place in the Industry.

If a new company were formed, it would be important that it become a formidable force. This can only be achieved if the farmers feel they are treated with a sense of fairness. Obviously, with 82 dealers operating at present and with most of them being growers as well, there is a strong sense of needing to see what is going on in the market and to protect themselves as much as possible. The smaller farmer is the one that has become most vulnerable.

The greatest constraints on a company of the type recommended are:

(1) The person who is selected as manager. This person not only has to be knowledgeable but also possess the organizational ability to make the number of shareholders grow, while at the same time making a profit.

(2) The catalyst for this company is very important. It would probably get off to a better start if a group credible to the farmers undertook the project. The most logical, the producers' association, consists of many grower-dealers. The government might survey each individual farmer and select a group from them to initiate the company. It would also be appropriate to invite any dealers to become involved, the reason being that they may not really like operating as independent dealers but had no other choice since there existed no company of this nature in which they could invest.

(3) The provincial government may be reluctant to assist such a corporation because of interference in the market-place. However, this argument is not valid because the government has interfered in the past on behalf of the Industry and individual dealers.

(4) To start off business in the table potato market is safer but less profitable. Profits may therefore be slow coming in and interest may consequently wane.

(5) There may be pressure from the dealers to keep this company out, by putting the squeeze on their clients.

(6) It will be hard to persuade farmers to sell their potatoes to the company when some of them are supported by their present dealers.

No matter how many problems a company such as this may face, if it is supported by at least 50 - 100 farmers with the right amount of capital, it will undoubtedly be a force to be reckoned with in the market-place in the years ahead.

FEE STRUCTURE

The fees charged to farmers can be set up in a number of different ways, for instance, using the average in the Industry today i.e. 50¢ per cwt. Alternatively, a minimum rate of 25¢ per cwt. could be charged, or 5% of the price up to a maximum of 50¢. It should not be forgotten that this is to be a profit-making company. Nonetheless it has to show a sense of fairness and a fee structure which would allow it to make a profit, but preferably would assist the farmer when times are bad. The Board of Directors should set the fee structure for such a company.

POSSIBLE STRATEGY FOR IMPLEMENTATION

First of all, this company could work without the assistance of government or any farm group, but it is unlikely. It is possible for one person to rally a group of farmers to launch such a company and, if successful, to be able to raise the necessary capital.

The seed has to be sown somewhere and probably the best place would be the Royal Commission itself. Once this has happened, government should be handed the torch to solicit the views from all farmers and dealers and, if interest was shown, form a group to spearhead the development of such a company.

Another possibility might be to form a group from the N.F.U. and the Federation of Agriculture to act as the catalyst - or, if not both together, then one or the other. The producers' group might be the next option; however, I anticipate that this might be difficult. A further option would be to hire one person to solicit personally the views of the farmers and see if there is enough interest to get the company started.

Whatever the strategy, it should be remembered that the main reason a person would wish to invest is to make money. The secondary reasons would be to find a dealer on whom the investors know they can count, and to have a more stable market for their potatoes.

If the producers, whether small- or large-scale, feel that the dealers registered at present meet their needs, a producers company will probably receive little support; however, the need for such a company seems evident in the long term if the producers are collectively able to achieve a balance in the market-place.

APPENDIX A

ANNUAL OPERATING COSTS

General Manager - wages	$ 50,000.00
Secretary/Bookkeeper - wages	15,000.00
Benefits (10%)	6,500.00
Office Rent	12,000.00
Office Equipment	6,000.00
Office Costs	3,600.00
Telephone	10,000.00
Travel	20,000.00
Miscellaneous	2,400.00
	$ 125,000.00
Interest at 9% per annum on preferred shares	22,500.00
	$ 147,500.00

Directors' and/or Executive fees
Directors' meeting expenses
Depreciation
Bad Debts
Interest

APPENDIX B

OBJECTS

(1) To buy and sell potatoes either directly or on consignment.

(2) To buy potatoes on Prince Edward Island and to sell them either on Prince Edward Island or out-of-province.

(3) To hold potatoes in storage, to transport them to storage and/or to markets.

(4) To enter into contracts to purchase and to sell potatoes.

(5) To purchase, hold, lease, construct, manage and sell assets necessary for carrying out the above objects, such as land, buildings and equipment.

Background Document No. 3:

Certain Land Use Issues Related to the Growth of Potatoes on Prince Edward Island

Prepared for the
Royal Commission on the
Prince Edward Island Potato Industry

Hawthorn Farm Ltd.
I. G. MacQuarrie

August 1987

INTRODUCTION

The potato industry is of great importance to Prince Edward Island in terms of income and employment; it is the major component of agriculture which in turn is the Island's most important industry. There is, however, growing recognition of land-use and environmental problems related to the intensive farming methods used to grow this crop. Soils may become degraded; erosion from potato fields can easily lead to silted streams and over-enriched waters. Heavy use of pesticides also can create problems - while the fish kills that used to be rather common have practically disappeared, there is increasing evidence of ground water contamination.

This paper will examine some of the effects of present practices in potato production in terms of their effects on the land base, and will also note in passing more general environmental problems. Certain difficulties should be recognized at the outset: problems of soil degradation are very complex and poorly understood, and the amount of quantitative work relating soil problems with the economics of production is small. There is in particular a scarcity of Island data; however, certain information from New Brunswick may be usefully considered.

SECTION 1. Present Practices in Potato Production.

Potato production is specialized farming; 85% of the crop is grown by farmers whose main occupation is the potato.[1] Certain trends have become evident since the 1950's: fields (and acreages) have become larger, rotations have shortened, the use of fertilizers and pesticides has increased. These trends may be expected to have an impact on the land base.

a) Land in the Potato Rotation. To begin, it is instructive to examine the way in which acreages have changed over the years; TABLE 1 provides some information on this matter.

TABLE 1

P.E.I. Potato Acreages, Average Yields, Average Prices for selected years.

Year	Acres planted	Yield/acre (cwt)	Price ($/cwt)
1949	47,200	165	1.02
1950	41,900	153	0.67
1951	29,600	120	3.55
1956	42,500	165	1.48
1961	46,200	165	0.91
1966	52,100	207	1.09
1971	46,800	199	1.42
1976	61,600	241	4.38
1977	55,000	215	2.45
1978	56,000	221	3.34
1979	61,000	254	2.76
1980	58,000	228	8.78
1981	64,000	240	4.78
1982	69,000	252	4.41

TABLE 1, continued

Year	Acres planted	Yield/acre (cwt)	Price ($/cwt)
1983	70,000	263	7.94
1984	72,000	250	5.06
1985	76,000	240	3.15
1986	64,200		
1987	64,000		

Sources: Agricultural Statistics, Prince Edward Island.
Statistics Canada (1986 and 1987)

Actual acres planted have run from a low of 29,600 in 1951 to a 1985 high of 76,000, or over this extreme have more than doubled in the thirty year period. The upward trend becomes most evident in the 1970's; year-to-year changes are the resultant of many factors including the widely fluctating price. Yields have increased significantly since the 1950's; one factor involved here is the use of more and more highly concentrated fertilizers. However, over the last decade yields seem to have more or less stabilized - a point of some importance in considering the possibility of increased production.

While acreages planted have shown as upward trend, it is more difficult to get an estimate of how much land is in the potato rotation, or for that matter exactly what rotations are used to what degree. Many different rotations are used, with farmers trying as always to get an improved system at less cost. Some of the more common rotations are illustrated in the following TABLE.

TABLE 2

Common Potato Rotations on P.E.I.

YEAR					
First	Second	Third	Fourth	Fifth	Percent Producers Using Rotation (averaged)
Potatoes	Ryegrass				8
	Grain				6
	Grain	Forage			75
	Peas	Ryegrass			0.5
	Potatoes	Grain	Forage		2-3
	Ryegrass	Potatoes	Grain	Forage	1-2

Sources: Industry Officials and Farmers (Interviews)

...4

It is now abundantly clear that continuous potato production (without crop rotation) is essentially impossible here for any length of time. Problems such as greatly increased erosion, yield quantity and quality decreases soon appear. Rotations are used to give the land a rest from intensive tillage, to build the important organic matter content back into the soil, and to provide winter cover for the soil. However, rotations may be as short as a two-year, potatoes-grain system. At present the most common pattern is a three-year, potatoes-grain-forage alternation. Such a pattern still leaves land bare to erosion for much of the time.

Another approach to estimating rotation length may be simplistic, but it involves estimating the total amount of land in the potato rotation, then dividing that by the land actually planted to potatoes in a given year. For instance, one industry official estimated that for 1985:

$$\frac{180{,}000 \text{ acres (potato rotation)}}{76{,}000 \text{ acres (potatoes)}}$$

Rotation length = approximately 2.4 years.

Averages such as this may not be very meaningful due to the wide and changing variety of patterns used, but they do point to the fact that rotations are short, i.e. less than three years on average. This conclusion has soil degradation consequences.

b) Fertilizer (and other chemical) use. It is of course well known that potatoes are 'heavy feeders'; production now involves heavy fertilizer use. Fertilizer use and composition will vary with the history of the field and the variety grown; rates of from 800 - 1100 lbs/acre are commonly used at present. A 'ballpark' estimate of total use on the potato crop could be obtained by multiplying an average of 1,000 lbs/acre by the 75,000 acres:

1,000 x 75,000 (/2,000) = 37,500 tons per year.

This number is probably low; the Atlantic Fertilizer Institute estimates about 65,000 tons of fertilizer used in P.E.I. in 1985, and surely the lion's share of this must have gone on the potato crop.

Actual tonnage of fertilizers may be misleading in another sense. Fertilizer analyses have been changing and in effect are now providing more plant food per unit of weight. So while tonnages may have hovered around the 60,000 mark for many years, actual nutrients may have increased by as much as 25%. This again has consequences both for the farmer himself economically and for off-farm, 'down-stream' effects.

The fertilizer story is complicated by the lack of crop-specific data; the pesticide story is much more difficult to obtain accurate information on. There are many companies and many formulations involved, and information is guarded because of commercial reasons. Only general statements can be made about pesticides and potato production: formulations and application techniques have evolved as have other aspects of the business; much attention must be given to fungus (e.g. blight) control, with frequent sprayings, over the last few years the public has become alarmed at groundwater contamination with insecticides such as Aldicarb.

It is clear that pesticides themselves, and their application machinery, are important cost items in potato farming. In a business analysis of selected potato farmers,[2] chemical sprays were found to cost an average of $125/acre, compared to $157/acre for fertilizer and lime. Pesticide sprays are thus among the two or three most costly inputs to the business.

c) Tillage practices. Because of the requirements for a fine seed-bed, for hilling and cultivating of the growing crop and for the many pesticide applications before harvest, there are many tractor passes over a field from spring to fall. In fact, a farmer makes literally dozens of tractor passes over a potato field; this has consequences not only in expense but also in soil compaction, one of the hidden soil degradation problems which plague producers.

While there is some information on the impacts of compaction on soil structure, it is not possible to quantify this problem with relation to potato production here as yet.

Summary

Since the 1950's, potato production has increased on Prince Edward Island in terms of acres grown and yields obtained. Crop rotations are short, probably averaging less than three years. Fertilizer and pesticide inputs are high - expensive and potentially problem-causing in the environment. Tillage, planting, cultivation, spraying, harvesting require many tractor passes over a potato field, raising the possibility of soil compaction problems.

Potato farming is intensive, expensive and potentially damaging to the soil base and other aspects of the environment.

SECTION 2. Soil Degradation and Potato Farming.

In the past few years, there has been an increase in concern related to the effects of modern high-yield agriculture on the soil base, and upon the environment in general. These effects may be dramatic and highly visible (such as water-induced gullying of a field), or they may be little understood, completely hidden problems such as soil compaction. In any case, the combination of modern technology and intense market influences has led many farmers to pay less attention to the soil base than is desirable. The overall result has been documented in several major studies on a Canada-wide basis.

Perhaps the most widely distributed of these studies has been the Senate's survey entitled SOIL AT RISK: CANADA'S ERODING FUTURE,[3] usually called the Sparrow Report in honour of its chairman, Senator Sparrow. This chilling document examined many issues related to soil conservation, including policy and organizational problems, and painted a bleak future for agriculture unless major changes are introduced.

While the Sparrow Report is the best known, the 1980's have seen several other major (and many shorter) studies. For instance the Agricultural Institute of Canada has sponsored conferences on soil conservation, and also an important book by Fairbairn, WILL THE BOUNTY END?.[4] The Science Council of Canada has published the report of a task force (chaired by the present author) called A GROWING CONCERN: SOIL DEGRADATION IN CANADA.[5] Agriculture Canada has been active in developing a National Agricultural Strategy which contains much emphasis on soil conservation. The list of publications, conferences and meetings is very long indeed.

It is not the intent of this document to survey and summarize such a wealth of information; rather a general insight into current problems, studies and solutions should be more useful.

SOIL DEGRADATION; SOIL LOSS.

Soils may become degraded (less productive; more expensive to farm) or totally lost through quite a number of physical, chemical, climatic or human influences. Some of these influences are readily controlled; others are virtually uncontrollable by farm operators or local agencies. The land may be lost to urban expansion, or to competing interests such as sand and gravel operations. Power lines, highways and the many aspects of modern technological activity take their toll. On a Canada-wide basis the loss over a few years is in the millions of acres, while the estimates of annual costs to the farmer from degradation vary between one and two billion dollars.[5]

This report concentrates on Prince Edward Island and on the soil degradation processes which are common here, and which to at least some extent can be influenced by the farm operator. These processes are (i) soil erosion caused by water and wind and (ii) soil compaction. Other related processes such as organic matter loss and acidification will be considered in the context of the major processes.

SOIL EROSION is a natural phenomenon; wind and water inevitably wear down the soil surface and transport the material downhill to the oceans. It is the accelerated erosion related to improper agricultural processes that is of concern; in severe cases the loss of soil from a field may exceed new soil formation by a factor of ten to one hundred. The long-term effect is to weaken soil structure, to decrease productivity, to make production more expensive due to the requirements for additional fertilizers, eventually to make production so difficult or expensive that land is abandoned.

On Prince Edward Island water-related erosion is commonly seen in gullying of bare fields, particularly following spring run-off.

However, sheet erosion also occurs, and is more insidious because it is so much less obvious to the casual observer. The effects are, however, evident in silted streams and clogged ditches near the eroding fields.

There is very limited quantitative information concerning erosion losses in Atlantic Canada. Loss rates from bare fields of from 20 - 40 tonnes/hectare per year have been recorded;[6] these rates must be classified as severe. In New Brunswick Coote and co-workers[7] have estimated water erosion as costing about $10 - 12 millions per year; about 90% of this was related to potato production - loss of product being particularly important. This group also suggested that the problem is growing in extent, severity and cost.

Stewart & Himelman[8] conducted erosion-related studies on P.E.I. test plots over a number of years; their data showed major losses of applied fertilizers (up to 40% on plots with 12% slope) related to run-off. Other experiments carried out by Sadler[9] at Charlottetown simulated erosion; yields were significantly reduced and additional fertilizers had to be added to make up for this loss.

All of the Atlantic Province studies relate to water-induced erosion; wind erosion is often visible during winter but its effects have not been quantified. While undoubtedly less important than water erosion, there is a hidden cost here as well.

SOIL COMPACTION may be natural (genetic) or human-induced; in either case soil structure, which is extremely important in crop production, is affected. Compact subsoil structure restricts water movement, root growth and thus crop production. This aspect of soil degradation is not well understood and is often ignored since it is invisible.

Human-induced compaction results from driving heavy machinery over the land, particularly when it is wet. When one considers that potato cultivation requires literally dozens of tractor-passes over a field during the growing season, it is not surprising that compaction may result.

Studies elsewhere have shown that compaction reduces crop yields very significantly; for instance in one study 12 tractor passes over a soil were shown to reduce yields by 22%.[10] Water infiltration also decreased and surface run-off was thus increased; as is commonly the case the soil degradation phenomena of erosion and compaction were interlinked.

Another aspect of the soil degradation syndrome may also be mentioned; this is the loss of soil organic matter. A small percentage of organic matter in the soil complex is important in maintaining good structure and helping to minimize compaction and erosion. Soil aeration related to tillage reduces organic matter; soils under short rotations with much tillage commonly have low organic matter content - thus poor structure and increased susceptibility to further degradation. On the Island our soils have low organic matter content under natural conditions; this low percentage may be decreasing under cultivation.

Finally, a number of processes, including the intensive use of inorganic fertilizers, can lead to an increase in soil acidity, which in turn decreases crop yields by making most plant nutrients less available. Increased acidity in effect means that more lime must be used, and crop production becomes more expensive. This problem receives little attention locally since our naturally acid soils require liming anyway in order to get decent productivity; the amount of additional lime necessary is a rather minor input to production.

In sum, soils in the Atlantic region have a number of problems which require attention if productivity is to be maintained - susceptibility to erosion, compaction, organic matter loss and increased acidity are the most important. Field cropping which leaves the soil bare over significant periods, which includes many passes with heavy machinery, which includes much tillage, and which uses heavy applications of inorganic fertilizers (increasing acidity) increases these problems.

On Prince Edward Island, potato farming is the most significant activity which contributes to these difficulties.

THE COSTS OF SOIL DEGRADATION.

The economic costs of soil degradation may, for convenience, be divided into two areas: direct costs to the farmer, increasing the costs of production and thus ultimately affecting crop prices (or farmer survival), and indirect costs to society, as soil erosion, fertilizer and pesticide loss affect environmental quality and thus the well-being of the entire community.

One of the most applicable studies on farm-related costs in this region is that of Coote and co-workers. They considered the costs of erosion, acidification and compaction on soils in the New Brunswick potato belt in terms of yield reductions and requirements for increased inputs. While this study could only be carried out by using a number of generalizations and estimates, in particular in basing calculations on risk of degradation rather than on actual measured degradation, the results are important. They estimated an annual cost of approximately 18.8 million dollars in this area. It should be noted that a) not all of this cost can be directly attributed to potatoes; other crops are grown in the area. However, potato farming is the major activity. Further b) New Brunswick's potato acreage is somewhat less than that of P.E.I., approximately 50,000 acres in comparison to our 65,000 - 70,000 range.

It is not simple to extrapolate these data to the Island; risk mapping of the type employed by Coote has not been completed here. Our soils are different; slopes and local climate (including run-off characteristics) will also differ. Yet cropping practices are similar, and our 'hidden costs' may well vary, but must also be very substantial. Coote's data suggest costs of hundreds of dollars per acre per year for New Brunswick's sensitive soils. Surely costs will be in the same order of magnitude on P.E.I.

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When one consider the indirect, off-farm costs, the degree of uncertainty increases - we simply do not have the local studies to quantify the problem. One of the most widely quoted studies carried out in the U.S. suggests that off-farm costs of soil degradation, in particular erosion, exceed on-farm costs.[11] In Ontario, sedimentation related to agriculture is estimated to cost over 90 million dollars per year.[12]

Once again one must argue that it is difficult to extrapolate from studies elsewhere to P.E.I. The kinds of sediment damage may be different in a marine, compared to a fresh-water area, the fisheries are different, recreational values vary. Other kinds of farming affect water quality; the potato producer is certainly not the only problem.

Yet it is clear that siltation and the sediment-filling of ditches and water-courses is a chronic and expensive problem. How much of the decreased recreational quality of our Island waters is due to potato farming? The answer is uncertain, but for many years fishermen and others have been pointing to the problem. How much of our estuarine problems, necessitating expensive changes in causeways (e.g. in the West River) relate to agriculture, and in particular to row-cropping, in the watersheds?

Several millions of dollars are being spent to correct these problems; can potato farming be charged with part of this societal expense? Probably, but no one knows how much.

Coote's group estimated off-farm costs in New Brunswick at about four millions per year, or less than one quarter of on-farm costs. Still, these are significant costs to the tax-payer.

Finally, it is significant that the recent Environmental Strategy for Prince Edward Island[13] identifies soil erosion related to potato production as our most significant environmental problem, and bases the Island strategy on alleviating this situation. To quote from this document (p.5):

> "Soil degradation represents a cost to farmers in terms of loss of fertilizers, organic matter and long term lowered productivity. Its downstream effects are equally important, in terms of clogged ditches, silted streams and harmful effects on fish living in waters overenriched by fertilizers or polluted by land wash and pesticides."

- -

Summary

In recent years, several national studies have drawn attention to problems of soil degradation in Canada. Soil erosion and compaction are of particular concern in eastern Canada; in New Brunswick calculations suggest that on-farm costs of these processes may exceed $18 million per year in the potato belt, with much of this cost related to potato cultivation. Off-farm, environmental costs are also significant.

It is suggested that costs on Prince Edward Island related to potato production are also high. The recent Environmental Strategy states this strongly.

SECTION 3. Impacts of Increased Potato Production on P.E.I.

We have seen that potato yields and acreages, while fluctuating from year to year, have shown an upward trend since the 1950's. Attempts to project these trends into the future are of interest to the Island farming community and to government. A number of concepts and assumptions require comment.

i) Yields per acre have been relatively stable over the last few years. Weather during the growing season is an unpredictable variable, but there is nothing to suggest from looking at recent yields that major increases will continue. On the other hand, the introduction of new varieties, of new technologies such as extensive irrigation, or for that matter the impact of biotechnological advances are all unknowns at present. Still, as of summer 1987, additional production through increased yields per acre does not look promising at least in the short term.

ii) Bringing more land into annual production by shortening rotations also does not look promising. Our present (less than three-year) rotation is probably too short already; certainly it does not eliminate soil degradation problems.

iii) Bringing additional land into the potato rotation is at least theoretically possible; the Island has a good deal of relatively high-class farmland that is out of production or is in other rotations. For instance, we still have a good deal of potentially valuable farmland covered with scrub woodland.

There are a number of difficulties here, however. For instance, clearing land and bringing it into cultivation is an expensive business, perhaps only economically justifiable under special circumstances. There is relatively little available land in the main potato-growing areas. Further, bringing additional land into cultivation would almost inevitably mean bringing less-suitable land into potatoes, e.g. land with steeper slopes or land with drainage problems, etc.

Finally, it may be argued that a good deal of the land now in the potato rotation is suffering from degradation and accompanying environmental damage; surely we should try and farm what we have better before trying to farm more land in expensive and damaging ways.

iv) One method of increasing the amount of crop suitable for the market seems to get relatively little attention except from some of the growers themselves. The loss rate, or cullage rate on Island potatoes (i.e. potatoes not suitable for market because of size, shape, bruising, etc.) is very high. For instance, the five-year average cullage and loss rate from 1980-84 was close to 22%, or almost a quarter of the crop.[14] Such a rate is much higher than national averages; any practices which would improve potato quality in growing or handling, decreasing loss and increasing volume to market, are obviously of great benefit. In effect, we could market significantly more potatoes from the same acreage if the cullage rate was brought down to a lower level. Such an approach has obvious advantages.

Summary

At present the most obvious means of increasing potato production on the Island lie in increasing the actual acreage in the potato rotation, or in improving the proportion of the crop that reaches market by decreasing the loss and cullage rates. The latter seems to be the more desirable approach.

SECTION 4. The Future: Soil Conservation and Environmental Management.

The growth of the potato industry since the 1950's has been the result of many individual decisions and of the incorporation of a good deal of production-increasing technology into the system: greater acreages, improved fertilizers and pesticides, improved varieties, major changes in harvesting and handling facilities. One may expect some changes in these variables to continue, but two other social impacts affecting the industry are important.

The first of these is the movement toward supply management in agricultural commodities - a move which is in itself profoundly affected by Canada's negotiations on free trade with the United States. This factor lies outside the dimensions of this report.

Major changes are, however, occurring in Canada in terms of the realization of soil degradation problems, of the economic and environmental impact dimensions of the soils problem, and of the willingness of provincial and federal governments to come to grips with these difficulties. An analogy may be drawn with the situation a generation ago when we began to realize the costs of some kinds of industrial pollution. Slowly, research information was acquired. Public debate and media attention increased, followed by government legislation and regulation. The climate for enforcement stiffened, and industries that for many years had spewed out their toxins unhindered were brought under control. All of this took time, and the story is in no sense complete as yet. However, it is possible to point to economic savings and environmental improvement (for instance in water quality) which followed this slow pathway.

The major reports on soils and the environment which have been mentioned in this document all lead to a general conclusion: soil degradation is too expensive, too dangerous and too damaging to be ignored. What is yet to become clear is the mix of reactions that governments will take to alleviate the situation. Strong indications of action are already apparent: most provinces, for instance, are moving on Conservation Strategy documents such as the one mentioned above for P.E.I. Both Agriculture Canada and Environment Canada are concerned with the soils problems - research efforts are shifting toward soil conservation methods, public education is becoming a priority in these areas. A National Soils Strategy is imminent. These and many other actions lead to the conclusion that the country is (finally) seriously trying to come to grips with this complex problem.

We can again note some generalizations about this grappling. First, it is apparent that farmers alone, in the present market situation, cannot include often-expensive soil conservation methods into their operations without significant government help. Since soil degradation is a problem that affects all of us, both economically and environmentally, farmers have a strong claim for such assistance.

In many cases, the technology or farming methods which will improve soil quality are well known - e.g. in lengthening rotations, controlling surface run-off, improving organic matter content. What is most difficult is to incorporate these into an operation economically (since the pay-off is always long-term), to convince farmers of the desirability and necessity of action. The reports previously mentioned deal with these matters in detail: education, research, funding, technology transfer, guarantees, if necessary penalties for non-compliance. This document will not repeat the extensive coverage given by others, but generalize as follows:

i) Soil conservation and consequent environmental improvement is expensive. In some cases the physical and management changes necessary would probably equal the cost of the land; it might be necessary to spend $1,000 an acre on potato land worth about that much. Drainage, contouring, taking land out of production and putting it into less valuable crops are all costly.

ii) While many of the well known, tried and true methods of conservation will work, research, technological development and demonstration are also required. For instance, better methods must be found for protecting bare soil over winter following harvest of late varieties - a harvest that is sometimes so late that no cover crop can be established. Or in another obvious case, machinery that could work efficiently across slopes rather than up and down them would allow cross-slope planting, an obvious conservation benefit. It should be noted that the development of such technologies represents an opportunity for Canadians, not just an economic burden. Canada has been rather slow to develop conservation technologies; we import them, at a price.

iii) A driving force for the improvement of the situation is economic; the farmer and the country lose too much money with present practices. Another driving force is becoming more apparent. The general public will no longer put up with environmental deterioration, with loss of water quality, recreational opportunity, etc. as the 'price' of farming. There is already a good deal of discussion about applying the 'polluter pays' principle to a farmer: in effect if he lowers water quality in a stream, he pays in exactly the same way as an industry would. This would add another major burden to a situation that many farmers already regard as intolerable. Yet, the general feeling is increasing that no one can destroy an environment in the name of economics or employment, and that farm-origin pollution should be dealt with in exactly the same way as that from any other source.

iv) In sum, soil conservation related to potato production is necessary, possible, long-term and expensive. It requires the willing participation of the farmer and an extensive back-up from provincial and federal government agencies in terms of financial and information help, research, education and perhaps most important, policy decisions that take into account the importance and fragility of soil.

SUMMARY AND CONCLUSIONS

The potato industry is of great importance to P.E.I., but potato farming with its short rotations, intensive tillage, heavy use of fertilizers and pesticides, can be hard on the land base and on the adjacent off-farm environment. The situation has become more serious since the 1950's due to increased acreages in potatoes and increased intensity of the operations.

The most significant soil problems relate to erosion and compaction. Direct costs to the farmer lie in the areas of decreased yields, decreased quality, loss of fertilizers and other chemicals. Data from New Brunswick suggest that these costs on sensitive soils may be in the order of hundreds of dollars per acre per year. While this may be extreme, there is no doubt that soil degradation problems are an unacceptable cost to the farmer; a cost that cannot be borne by him alone over extended periods of time.

The off-farm costs of soil degradation are difficult to quantify but are highly visible in stream quality decreases. The costs probably range from a value that is a fraction of the on-farm cost to a value that is even greater than the cost to the farmer. Governments and society are becoming increasingly concerned about this problem, and increasingly less willing to accept such environmental damage as necessary.

The possibility of increasing potato production using more land with the present techniques is seen as generally unrealistic - it is important to improve the serious problems that we have at present rather than to extend them to more acres. Such improvement in present management practices is necessary, expensive, possible.

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Background Document No. 4:

Market Analysis of the Prince Edward Island Potato Industry

Prepared for the
Royal Commission on the
Prince Edward Island Potato Industry

Roygold Marketing Systems Ltd.
Max Roytenberg

June 1987

MARKET ANALYSIS OF THE P.E.I. POTATO INDUSTRY FOR THE PRINCE EDWARD ISLAND ROYAL COMMISSION

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MARKET ANALYSIS OF THE P.E.I. POTATO INDUSTRY

1.0. INTRODUCTION
GENERAL INFORMATION ON THE CANADIAN INDUSTRY

1.1. DESCRIPTION AND USES

The potato (botanically known as *Solanum tuberosum.* L.) is a member of the Solanaceae, or night-shade, family of plants, closely related to the tomato, the eggplant and the pepper. The potato is an annual plant, which, under favorable conditions, blossoms, and develops underground tubers at the end of horizontal underground stems. The tuber is an enlarged portion of the underground stem, wherein is stored surplus carbohydrates not used by the plant for growth, or other life processes. Of many sizes, shapes, and colors, the white flesh types of white Irish type potatoes are the most popular in North America, whereas yellow flesh potatoes have greater consumer appeal in some overseas markets.

Tuber formation normally occurs six weeks after planting, when the plant is in the early bud stage, in response to conditions favouring storage of carbohydrates. The tuber contains dormant buds in groups of three to five, accompanied by a leaf scar, which constitutes the "eye" of the potato, usually found on the upper surface of the tuber, i.e. in the direction of the light. The tuber, or portions of it containing these buds, can thus function as seed for a new potato plant. This is the basis of the seed potato industry.

A temperate zone plant, it likes cool weather, and yields best in regions with cool summers, ideally in light porous, fairly acidic, well drained and well aerated soil. Potatoes grow from sea level to 14,000 feet, with the growth period from planting to maturity ranging from 80 to 150 days, depending on the variety.

Varieties are numerous with continuous new development occurring aimed at higher yields, improved disease resistance, and better market qualities. Besides being classified by variety, potatoes are classified by type, such as long or round, by color of skin, such as white, russet, or red, and by color of flesh, such as white or yellow. The major North American varieties are the Russet Burbank, the Kennebec, the Norchip, the Superior and the Katahdin. In Canada, the Sebago, the Red Pontiac, and the Shepody, are more important than the Kathadin and the Norchip varieties.

The Russet Burbank, or Long White, variety is in demand both for processing and fresh potato market. It is increasingly the variety of choice in Canada. This is a significant shift from past practise, when Kennebec was the major variety. In P.E.I., it is estimated* that acreages has grown from 7,500 in 1975 to 30,000 acres in 1985. The Russet Burbank is processed into frozen french fries, and other frozen products, into dehydrated potatoes, and used by the consumer for baking, broiling, and french frying. Kennebec which is very important in the Maritimes, has excellent boiling and baking qualities, which make it very competitive in the fresh market. It is also used for chips in processing. Yields are generally high.

* General Manager, P.E.I. Potato Marketing Board.

In the U.S., while the Russett Burbank is grown in Idaho, Washington and Oregon, the Kennebec is primarily grown in North Dakota, Minnesota and Pennsylvania. Norchip, a variety widely used for processing, is also popular in North Dakota, Minnesota and Michigan. The Superior (a popular Maritime variety) and Katahdin, one early to medium, and the other late maturing, are widely grown in Maine and New York. Both are considered to be excellent varieties for processing and boiling. The Superior variety is resistant to most common potato diseases, as is the Katahdin, except for scab and ring rot.

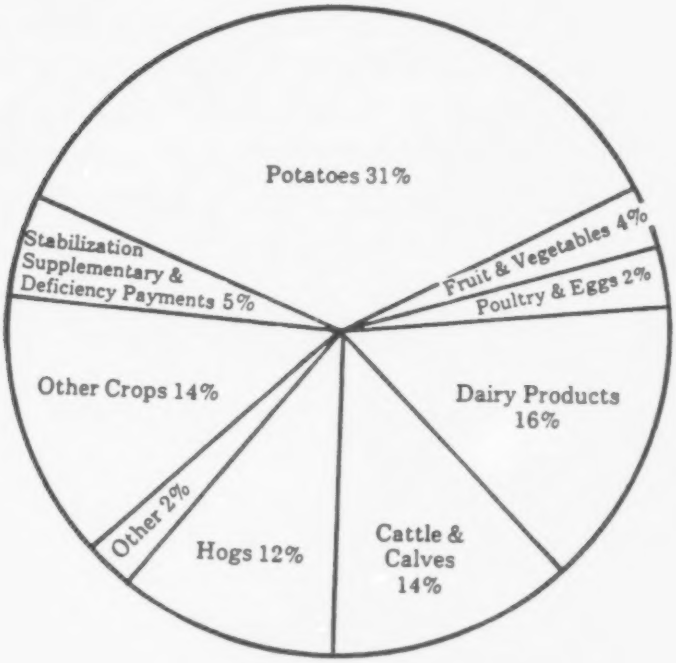
Specific market preferences play some role in potato variety production. While the Russet is popular on the Eastern seaboard, for the table market, there is interest in Kennebec and Sebago offshore, in South America, and in Southern Europe. The Lantic and Norchip varieties are well received in Quebec, as well as in Ontario. Manona is welcome in Ontario, as well, for chipping, while a market for Mountains exists in the Chicoutimi area. Florida likes Lantics, while Uruguay and Cuba show an interest in Pontiacs.

1.2. SIGNIFICANCE OF THE INDUSTRY

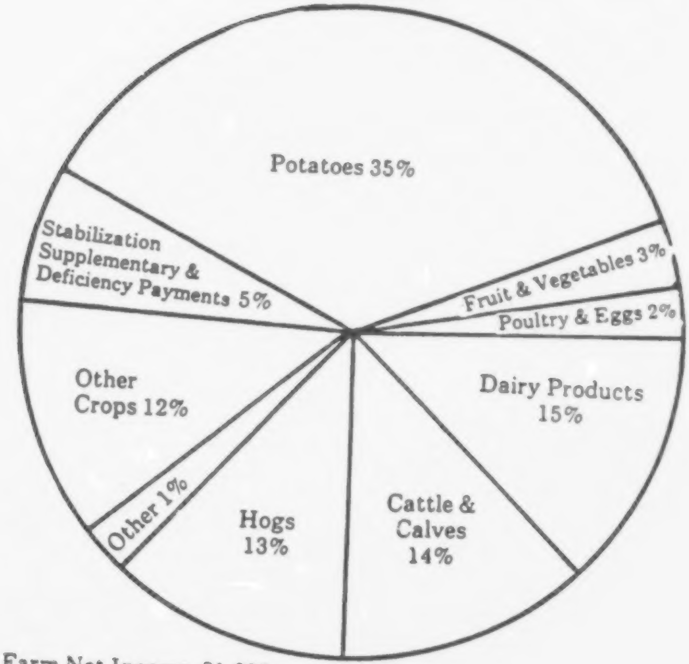
In Figure 1., graphs are presented showing the importance of the industry in Prince Edward Island. On a 10 year average basis, potatoes have provided 35% of total farm cash receipts. Agriculture is the largest product producing sector in Prince Edward Island, its contribution to the provincial gross domestic product varying from 7 to 14%. Potatoes have some years supplied 50% of total farm cash income. P.E.I. potato production has been the major factor responsible for a level of farm cash income in P.E.I. comparable with (and approaching, in good potato price years) that in Nova Scotia and New Brunswick (258 and 223 million dollars respectively in 1985). Within the Canadian context, potato production is a relatively minor product, of lesser importance than apples, but more important than other horticultural products.

SOURCE OF FARM CASH RECEIPTS
PRINCE EDWARD ISLAND

1985



1976 — 1985



Source: Farm Net Income, 21-202.

Figure 1.

2.0. THE CANADIAN POTATO SITUATION

2.1. PRODUCTION AND CONSUMPTION

2.1.1. General Information

During 1981-1985, apparent consumption of potatoes ranged from 1.6 million tonnes in 1981, to 1.8 million tonnes in 1983. Canadian consumption of potatoes is about 80% fresh, including imports, about 15% of domestic use going into processing, with the balance used as seed. Waste is calculated in excess of half a million tonnes, including that used for animal feed. Exports during this period have averaged about 15% of production, varying varied between 2.6 million tonnes in 1983, to 2.8 million tonnes in 1982 and 1984. Manufacturing use has been under 10%.

During 1981-1985, Canadian production varied between 56.4 million cwt. in 1983, and 66.8 million cwt. in 1985. Production has been in excess of 60 million cwt. in recent years.

Acreage has varied during this period between 279,000 in 1983, to 289,000 in 1984 and 1985. It fell to about 280,000 in 1986. P.E.I.'s share has grown from about 20% to 25% of the Canadian total. Yields have varied between 202 cwt. per acre in 1983, to 231 cwt. per acre in 1985. They averaged 222 cwt. per acre in 1986. Yields in P.E.I. are generally the highest and have shown an upward trend in recent years.

Production has been rising in P.E.I., and in the province of Quebec, while declining in Ontario. Production in New Brunswick has been variable. There has been increasing production in Alberta, and more recently in Manitoba. Production in P.E.I. reached a peak of 19.0 million cwt. in 1984, and was 17.8 million cwt. in 1986. P.E.I.'s share of production has been climbing, from about 20% to around 30%. Alberta, and particularly Manitoba (10% up to 12%), have also increased their share of total production. Quebec's share has grown from under 14% to about 15%.

Production in Atlantic Canada, an area containing 9% of national population, makes up about 50% of production. Ontario, for example, with 12% of the production, has 35% of the population. This variance between population and production emphasizes the need for Maritime potatoes to move from the region in the search for markets.

Statistics Canada reports that Canadian commercial production over time usually provides between 93-95% of total Canadian supplies. The trend is for 8%-12% to be exported. Canada is a clear net exporter. Some 30-35% is processed, about 50% is used fresh. Somewhat in excess of 10% of commercial production is used for seed. (These figures ignore a waste factor in the system which could equal 25% of domestic disappearance and is about 12% of gross supply. Most of these potatoes are identified as culls when potatoes are graded for seed, table, or processing, purposes (Table I-1, and I-2, ANNEX V).) Data show a long term upward trend in total table consumption. Net food disappearance was about 1.25 million tonnes in 1960's, rising to about 1.5 million tonnes in the late 60's and early 70'. Usage has grown to 1.7 million tonnes and up to 1.8 million tonnes in some years. Peak disappearance of close to 1.9 million tonnes occurred in 1979.

There is little indication of growth on a per capita basis. Consumption has varied between 65 and 75 kg. per person, in most years, with no trend indicated. Peak consumption per capita reached 79 kg. in 1979, and fell to about 65 kg. in 1981.

2.1.2. SEED POTATOES

The seed planted in Canada is usually certified seed. Most provinces have established systems for seed certification. Standards for certification vary between provinces. The strictest regulations are those implemented in Prince Edward Island. Most provinces include the requirement that fields entered for certification be planted with seed that meets the approval of the certifying agency. There are complex rules about the distances certified fields have to be grown from other potatoes, and requirements that samples of seeds be planted during the Winter in the South to prove their freedom from disease. Seed is inspected while growing, and after harvest, by qualified inspectors of the federal government. Seeds that meet the standards may be certified and offered as certified seed with a tag attached identifying the product as "certified seed potatoes" and the name of the certifying agency. Over 90% of certified seed is grown in P.E.I. and New Brunswick. More than two times as much certified seed acreage is planted in P.E.I. compared with New Brunswick.

In 1985, certified seed acreage was 101,440 acres of which 53,604 acres were planted in P.E.I. Some 99,150 acres were planted to seed in 1986, with 58,895 acres planted in P.E.I. Certified seed acreage in P.E.I. is greater than that planted in any state of the U.S., with Idaho (47,000 acres in 1984), and North Dakota and Maine (about 30,000 acres), the main producers.

The bulk of certified seed production in Canada is now devoted to the Russett variety, followed by the Round White variety. This situation has been a consequence of substantial increases in the production of Russett Burbank potatoes in recent years. Significant declines have occurred in the production of Sebago over recent decades. Acreage and production data are shown in ANNEX V - tables 3-10.

Canadian seed potatoes are certified by the Seed Potato Division of Agriculture Canada Food and Inspection Branch. In July 1980, a seed potato quality improvement program was launched to improve seed potato quality, improve management techniques, encourage the development of improved varieties, expand market promotion, and intensify the disease control efforts. The new regulations implemented a zero tolerance for spindle tuber in all seed grades, and improved post-harvest testing for bacterial ring rot. (A comparison of Maine and Canadian standards for certified seed potatoes is shown in Annex II). The above program was implemented as part of an agreement with the E.E.C. to speed up the expansion of Canadian capacity for post-harvest laboratory testing, to develop production criteria for seed farms in line with European practise, and on mutually agreed-upon post-harvest testing procedures. The agreement calls for the creation of bacterial ring-rot-free zones, where the disease has not been identified for at least three years. The E.E.C. currently forbids the importation of potatoes from countries purchasing seed potatoes from Canada.)

Potatoes Canada is a development related to this effort, and is a partnership of governments, federal and provincial, with the private trade, to improve the quality of Canadian seed and to facilitate the penetration of seed export markets.

2.1.3. POTATOES FOR OTHER USES

Most processed potatoes are marketed in the form of frozen products, i.e. frozen french fries, potato puffs, etc. A significant portion is marketed as chips, with the balance offered to the public in dehydrated and in canned form. Processed products account for about 35% of all marketable production. They account for 30-35% of farm cash receipts from potatoes. In Canada, frozen dehydrated and canned products account for about 60% of the value of all potatoes used for processing in 1984. Potatoes used for dry chips account for 40%. Dehydrated products are marketed as starch, granules, shreds, and flakes. The year 1985 saw the implementation of a potato diversion program in Canada which swelled the volume of potatoes normally disposed in the form of starch, and similar products.

Table 1.

SUPPLY AND DISPOSITION OF CANADIAN POTATOES, CROP YEARS 1982-83 TO 1987-88 (KT)

Crop Year (1 July-30 June)	Marketable Production	Imports	Total Supply	Exports	Available for domestic use			
					For Processing (est)	Fresh Seed	Total	Farm Prices (c/t)
1982-83	2,252	112	2,364	266	811	1,287	2,098	108.25
1983-84	2,149	145	2,294	261	753	1,280	2,033	161.38
1984-85	2,372	156	2,528	312	767	1,449	2,216	125.71
1985-86	2,510	146	2,656	223	800	1,633	2,433	70-80
1986-87(est.)	2,150	150	2,300	220	800	1,280	2,080	120-130
1987-88(est.)	2,500	145	2,645	210	800	1,635	2,435	95-105

Source: Agriculture Canada, Market Commentary (1986).

Table 2.

CANADIAN POTATO PROCESSING INDUSTRY STATISTICS

Processed Potato Product	Cost of Raw Products ($000)				
	1980	1981	1982	1983	1984
Chips, Frills, etc. (1)	24,661	32,573	36,608	38,248	41,412
Frozen, Canned, Dehydrated (2)	44,483	54,662	59,827	60,303	62,293
Total cost of raw product	69,144	87,235	94,435	98,551	103,703
Total Potato Farm Cash Receipts (3)	212,000	325,200	257,500	279,100	312,900

Sources: (1) Statistics Canada, Miscellaneous Food Processors, Cat. 32-224

(2) Statistics Canada, Fruit and Vegetable Processing Industries, Cat. 32-218

(3) Statistics Canada, Agricultural Economics Statistics Cat. 21-603

Table 3.

CANADIAN EXPORT STATISTICS
($ Cdn. Million)

	1981	1982	1983	1984	1985	Jan.-Nov. 1986
Potato products frozen	12.932	22.362	19.412	30.965	34.867	42.345
Potatoes canned	0.263	0.181	0.193	0.144	0.227	0.148
Total	13.195	22.543	19.605	31.109	35.094	42.493

Table 4.

CANADIAN IMPORT STATISTICS
($ Cdn. Million)

	1981	1982	1983	1984	1985	Jan.-Nov. 1986
Potato products, frozen	1.222	1.105	1.470	1.642	3.546	3.824
Potatoes, canned	0.153	0.229	0.146	0.244	0.224	0.274
Instant mashed pot.	0.244	0.232	0.182	0.469	0.498	0.506
Potatoes, dried NES	2.036	2.259	3.010	3.301	2.707	2.930
Total	3.655	3.825	4.808	5.656	6.975	7.534

Source: Statistics Canada, Cat. 65-004, 65-007 (1981 - August, 1986)

Table 5.

SELECTED CANADIAN AGRICULTURAL EXPORT STATISTICS

($ Cdn. Million)

	1980	1981	1982	1983	1984	1985	% Growth 1980-1985
Frozen, canned potatoes							
USA	2.7	3.9	5.9	6.6	13.2	18.9	600
TOTAL	14.3	13.1	22.5	19.6	31.1	35.0	145
All agricultural products							
USA	1,113	1,260	1,606	1,736	2,236	2,427	118
TOTAL	7,786	8,783	9,304	9,505	10,307	8,882	14

Source: Statistics Canada, Trade of Canada Exports, Cat. 65-202

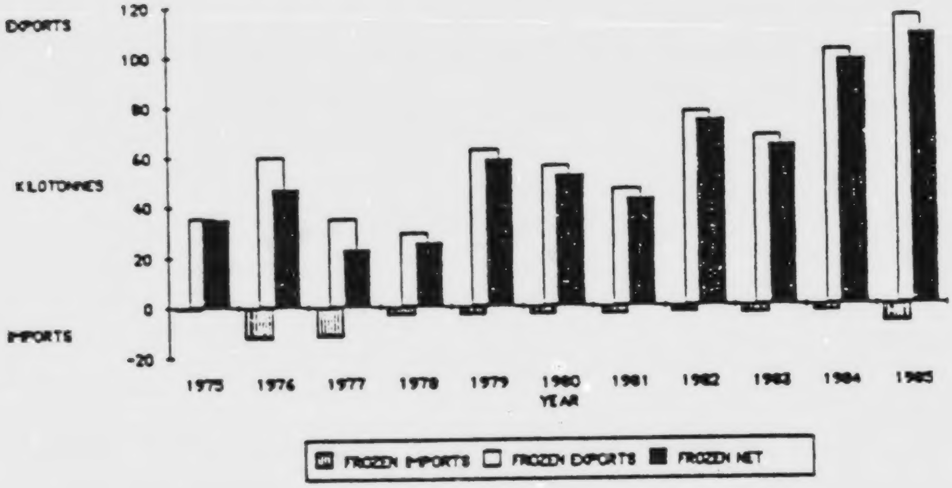
The potato component in:

1. canned meat stews, dinners and preparations;
2. preserved, frozen, canned and other processed vegetable preparation;
3. pre-cooked frozen dinners; and
4. other food preparations

constitutes a second major, although less uniformly distinguishable segment of Canadian processed food exports, and adds significantly to the foregoing.

From an aggregate of data submitted by the Canadian Food Processors Association, it would appear that a weighted average of 11.5 percent of all members' food products processed using potatoes and potato products is presently being exported.

Canadian Imports, Exports, and Net Trade in Processed Potatoes



Source: Statistics Canada, Trade of Canada, Cat. 65-202

Figure 2.

2.2. COST OF PRODUCTION

Data available from the Eastern Canadian Potato Stabilization Program indicate that cash costs have not varied substantially in recent years between Prince Edward Island, New Brunswick and Ontario, on a per hundred weight basis. Costs have tended to be somewhat higher in the province of Quebec. Cost of production in recent years per hundred weight have been calculated in excess of $4.00/cwt., and have been generally higher than costs reported in the U.S.*

Detailed cost-of-production studies for Canadian potatoes are not undertaken on a regular basis. However, since potatoes were designated for price support in 1981, under the 1979 Eastern Canada Potato Stabilization Program, support-price calculations were made by the Canadian Government, and in conjunction with these calculations, certain costs of production data (termed "out-of-pocket costs") were developed for potato growers in Prince Edward Island, New Brunswick, Quebec, and Ontario.

Cash costs converted to U.S. dollars per hundredweight (as of Jan. 1) for potato production in Eastern Canada and Ontario are shown in the tabulation below.

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* The Competitive Status of Major Supply Regions for Fall Harvested Fresh White or Irish Potatoes in Selected Markets, U.S.I.T.C. Publication, 12-82, August 1982, p. 41.

Table 6.

CANADIAN CASH COSTS OF PRODUCTION, 1976-79 CROPS

CROP YEAR	PRINCE EDWARD ISLAND	NEW BRUNSWICK	QUEBEC	ONTARIO	LONG ISLAND	MAINE	OREGON	AVERAGE
	- US $/CWT. -							
1976/77	2.54	2.84	3.02	2.09	--	--	--	2.61
1977/78	2.29	2.39	2.14	1.66	--	--	--	2.13
1978/79	1.97	1.97	2.02	1.68	--	--	--	1.91
1979/80	2.04	2.04	2.35	1.99	--	--	--	2.12
1980/81		4.41			3.00	2.38	1.64	

Table 7.

COMPARATIVE COSTS OF PRODUCTION, 1980 AND 1981 CROPS

CROP YEAR	P.E.I.	N.B.	ONTARIO	MAINE	IDAHO	WISCONSIN
	- US $/cwt. -					
1980/81	3.68	--	--	3.34	3.57	2.89
1981/82	4.86	4.41	4.60	4.98	4.25	3.56

Fuel and fertilizer costs were the most important cost elements of total costs, and generally, each accounted for about 20 percent of total cost. Other important elements of total cost were labor and spray.

Costs in Prince Edward Island declined from $2.54 per hundredweight in 1976/77 to $1.97 per hundredweight in 1978/79 and then increased slightly to $2.04 per hundredweight in 1979/80 (table 40). In 1979/80, seed costs were the most important cost element of total costs and accounted for 26 percent of the total. Other important cost factors for production in Prince Edward Island and their respective share of total costs were spray (19 percent), fertilizer (13 percent), and labor (11 percent).

The data show a cash cost advantage to P.E.I. in cost of production in these earlier years relative to other provinces, except Ontario. Data show a declining tendency in cost of production in recent years. Volume of production has been the most obvious factor in reducing costs per unit of output. Unfortunately, average prices to P.E.I. producers have declined even more. Futhermore, the business analysis* focused on producers who averaged about 200 acres of potatoes under cultivation. This group is not representative of P.E.I., producers. According to a study** carried out by Spatial Planning in 1983, some 473 units of a total 626 cultivated between 0 and 30 hectares (75 acres). Some 112 units seeded between 31 and 80 hectares (200 acres). Only 41 units (about 7%) were over 80 hectares in size. Since the larger sized units show only borderline profitability on a cash basis, the study would appear to indicate that most P.E.I. potato producers have been receiving average returns less than their costs.

* As indicated from the source identified above.

** Potato Marketing Board Producer Association Study, Spatial Planning Inc., April 26, 1984, p. 109

TABLE 8.

POTATO PRICES RELATIVE TO THE COST OF PRODUCTION

YEAR	COST OF PRODUCTION	AVERAGE PRICE
	- per cwt.	- per cwt. -
1981	4.86	4.19
1982	3.75	3.74
1983	4.64	7.46
1984	4.27	3.44
1985	4.03	3.15*
Five year average	4.29	4.40

* The 1985 average price is taken from Statistics Canada (22-003).

Sources:

1. Prince Edward Island Potatoes: Business Analysis, published jointly by the P.E.I. Department of Agriculture and Agriculture Canada, 1984 and 1985.
2. Prince Edward Island Potato Enterprise Study, published jointly by the P.E.I. Department of Agriculture and Agriculture Canada, 1980, 1981, 1982, and 1983.
3. Prince Edward Island Potato Statistical Summary, P.E.I. Department of Agriculture, 1985, Table 14.

2.3. UTILIZATION

In P.E.I., utilization is primarily oriented toward table consumption, about half of the P.E.I. shipments are for the table market, compared with about 15% of New Brunswick shipments. In Quebec, about 70% of production enters the fresh market. For New Brunswick and Prince Edward Island, 20% and 15%, respectively, moved to the seed market. Local use, including seed and processing make up 50%, and 15% respectively. In the case of New Brunswick, most of this disposition is for processing. In Quebec, about 20% of the potatoes are processed. Only a small amount of Quebec production is moved out of the province, primarily into the Ottawa market. In Ontario, some 60-70% of production is processed, while 70% of production is processed in Manitoba. Processing is important in Alberta, as well.

2.4. STOCKS

Potato stocks in Canada are higher in November, immediately after harvest, and are gradually depleted, so that by June stocks are usually non-existent. Stocks in Eastern Canada account for the majority of holdings. Movement in to consumption is generally orderly. The availability of storage facilities increases producer capacity to withhold their product from the market in the face of unattractive harvest period prices.

Data in a study by Price Waterhouse* indicated that 35% of storage facilities in P.E.I. had an age of 5 years or less in 1983, with 47% having an age of 8 years or less.

* A Study of the Potato Industry of Prince Edward Island, Price Waterhouse Associates, May 1983, pp. 7-13

Some 86% of acreage was serviced by facilities with equipment for heating, 54% of acreage, with through-the-pile ventilation, and 37% of acreage with storage facilities offering humidity control. Some 43% were serviced by facilities with good to excellent insulation. These facilities are often associated with packing equipment. The study showed that the utilization rate of packing equipment at that time was about 40% (single shift). Industry's infrastructure is substantial, and it may, on an overall basis, have assisted the P.E.I. industry in maintaining a competitive advantage in its capacity to ensure orderly movement to market. In 1984-85, the most important shipping month was April, when 14% of total shipments left the island.

Statistics in ANNEX V, Tables I-11 and I-12, show the differences among producing areas in this respect. The data show that P.E.I., along with Manitoba, is well favored in its capacity to market the crop on a gradual basis. (This is less relevant in Manitoba from a market price point of view, where the market is essentially a processing one). Most other provinces ship substantial portions of their supplies to market during the period of seasonally low prices. This is particularly marked for Quebec and Ontario. This situation permits P.E.I. to play a more dominant role in these markets after the harvest period. P.E.I. retains a similar advantage over most U.S. producing areas (Table 12, Annex II). Reports of government assistance of $12 millions in the province of Ontario, directed toward storage facilities, and similar investments in Quebec, raise the possibility that this P.E.I. advantage in the Canadian market may have been reduced.

Although shipments are fairly well distributed, unload data indicate that January is the peak shipping month. Shipments during the January-May period are the most important. Shipments decline to their lowest levels in June-July. Relatively stable shipments at a lower level occur from August through to December.

2.5. PRINCIPAL DESTINATIONS IN POTATO MARKETING

Montreal, Toronto and Quebec city are the most important domestic markets for domestic potatoes. The former have about the same importance, with Quebec City being about half the importance of either of these centres*. Prince Edward Island accounts for about a third of all Canadian shipments. Those from New Brunswick run at about 10% of the total.

The data in Table 9 show an increasing reliance on the domestic market for the disposition of P.E.I. potatoes. While 1985 was not a good export year, the rising sales of potatoes in Ontario and Nova Scotia are indicators of the changing situation. Exports declined from just under 40% to just under 30%.

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* The Competitive Status of Major Supply Regions for Fall Harvested Fresh White or Irish Potatoes in Selected Markets USITC Publication, 12-82, August 10, 1982

Table 9.

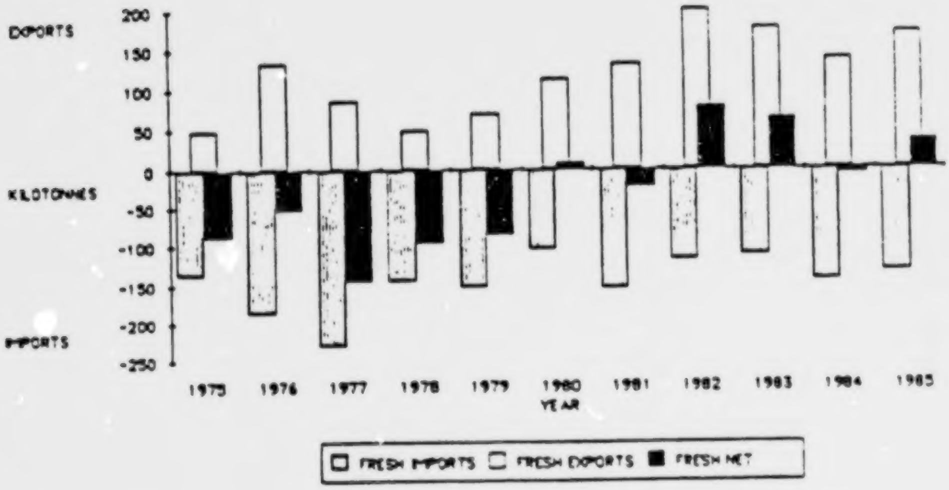
P.E.I. POTATOES COMPARISON OF EXTERNAL DESTINATION
1980 and 1985

DESTINATION	1980		1985	
	000 CWT.	%	000 CWT.	%
ONTARIO	2,327	27.2	2,666	36.4
QUEBEC	1,475	17.3	1,115	15.2
NEWFOUNDLAND	486	5.7	520	7.1
NOVA SCOTIA	584	6.8	697	9.5
NEW BRUNSWICK	206	2.4	201	2.7
OTHER CANADIAN PROVINCES	--	--	9	0.1
U.S.A.	1,457	17.0	836	11.4
OFFSHORE	2,024	23.6	1,268	17.3
	8,559	100.0	7,313	100.0

Source: P.E.I. Potato Marketing Board

Canadian exports of potatoes have exceeded five million cwt. in recent years, with the seed potatoes accounting for about 50%. The U.S. is the major market for seed potatoes, with South American destinations being of great importance.

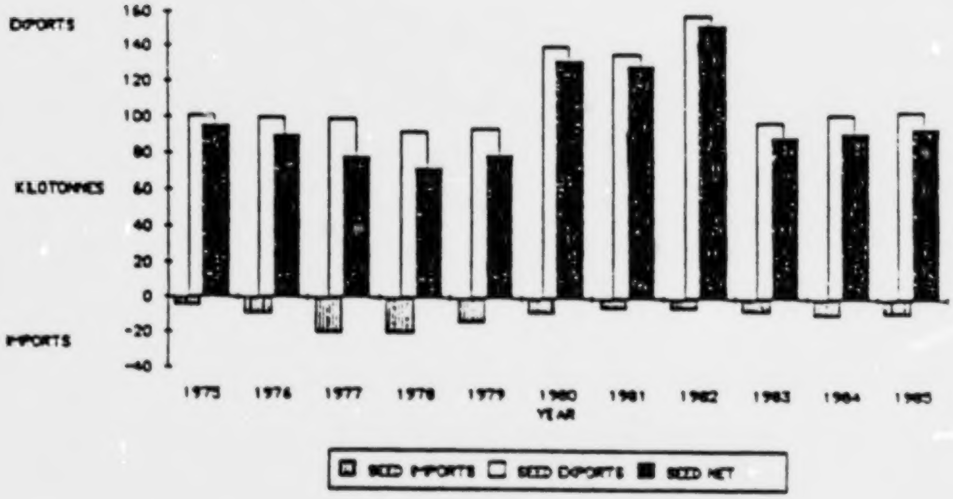
Canadian Imports, Exports, and Net Trade in Fresh Potatoes



Source: Statistics Canada, Trade of Canada, Cat. 65-202

Figure 3.

Canadian Imports, Exports, and Net Trade in Seed Potatoes



Source: Statistics Canada, Trade of Canada, Cat. 65-202

Figure 4.

Exports of fresh potatoes other than seed, also find their chief market in the U.S., with the Caribbean and South American markets being of secondary importance. Most exports come from Eastern Canada, primarily P.E.I. and New Brunswick. Small shipments from Manitoba for processing markets in the U.S. also occur. Most Canadian potatoes are exported to the U.S. North-East. Canada imports substantial quantities of fresh potatoes, primarily for other than seed use, with the U.S. being the primary supplier.

The place of Canada on the world scene is illustrated by the data in Table I-19, which shows world potato production. Canada is a small producer relative to a number of other countries. Its importance in a world context comes from the significant export movement coming from this country. However, it must be noted that the Netherlands which is the world's major exporter, shipped exports in 1982 equal to Canada's 1981 production.

As shown in ANNEX V - Tables 15-18, Canada's major export market for table potatoes, remains by far the U.S. There appears to be some evidence of an upward tendency with exports rising from over 2 million cwt. to 3 and 4 million cwt. P.E.I. table exports appear to be growing over time, and have been in excess of 1 million cwt. recently. Results were disappointing in 1985, when product from New Brunswick at depressed prices replaced P.E.I. product in the U.S., and cut movement, at 747,000 cwt., by half, compared with 1984. Canadian exports offshore remain targetted essentially for Trinidad, Barbados and Puerto Rico. P.E.I. dominates the Trinidad and Barbados markets. Sales to Barbados appear to be growing.

For seed potatoes, the U.S. also remains the most important market, but exports have suffered in comparison with 1980 and 1981, at the 771,000 cwt. reached in 1985. Overall movement, including that offshore, maintained exports above 2 million cwt in 1985. This was substantially lower than in most recent years. Aside from the U.S., major markets remain Cuba, Venezuela, and Italy. An important market in Argentina has virtually disappeared, while the entry of Portugal and Spain into the Common Market has sharply reduced movement to these markets. This has occurred in spite of derogations from the E.E.C., aimed at retaining these markets. P.E.I. a major supplier to markets like Uruguay and Italy, has suffered the losses of market in the E.E.C. markets, particularly in Portugal and Spain. Movement to Greece has also been affected. A new market has appeared in Turkey. P.E.I. seed exports were maintained at a level in excess of 1,000,000 cwt., making up about 50% of total Canadian seed exports.

Table 10 shows the shifting importance of P.E.I.'s markets in the U.S. comparing results in 1981 and 1985. The relative market interest in Massachussetts and Maine has grown, while that in other markets has declined. This situation is underscored in Table 11, under the more near-normal conditions of 1986. The major adjustment concerns a recovery of interest in New York, which regained its 20% share of P.E.I. movement to the U.S.

Table 10.

COMPARISON OF P.E.I. SHIPMENTS TO U.S.A. DESTINATIONS FOR SEED AND TABLESTOCK POTATOES, 1981 AND 1985 CROP YEARS

DESTINATION	VOLUME		PERCENTAGE	
	1981	1985	1981	1985
	- 000 cwt. -		- % -	
MAINE	103.5	137.3	5.8	16.4
MASSACHUSSETTS	287.7	276.8	16.0	33.2
NEW YORK	371.2	115.3	20.6	13.8
NEW JERSEY	145.7	34.0	8.1	4.1
PENNSYLVANIA	195.2	85.5	10.8	10.2
FLORIDA	100.1	35.5	5.6	4.2
OTHER STATES	597.6	151.1	33.1	18.1
TOTAL U.S.A.	1,801.0	835.5	100.0	100.0

Source: P.E.I. Potato Marketing Board

Table 11.

COMPARISON OF P.E.I. SHIPMENTS TO U.S.A. DESTINATIONS FOR SEED AND TABLESTOCK POTATOES, AUGUST-JANUARY 1985 AND 1986 CROP YEARS

DESTINATION	VOLUME		PERCENTAGE	
	1985	1986	1985	1986
	- 000 cwt. -		- % -	
MAINE	51.2	108.5	5.8	12.8
MASSACHUSSETTS	123.4	753.8	38.1	30.0
NEW YORK	37.7	178.9	11.6	21.2
NEW JERSEY	12.5	45.2	3.8	5.3
PENNSYLVANIA	35.4	69.9	10.9	8.3
FLORIDA	34.6	105.0	10.7	12.4
OTHER STATES	29.6	83.9	9.1	9.9
TOTAL U.S.A.	324.4	845.2	100.0	100.0

Source: P.E.I. Potato Marketing Board

2.6. TARIFFS AND EXCHANGE RATES

Potatoes are divided for tariff purposes into seed potatoes (tariff schedules of the United States (TSUS) items 137.20 and 137.21) and "other than seed" (USUS 137.25 - 137.28). Unless imported seed potatoes are certified ("by a responsible officer, or agency, of a foreign government in accordance with official rules and regulations to have been grown and approved especially for use as seed"), they are dutiable, as other than seed potatoes.

The Federal, or federal-state, Inspection Service of USDA and the Production and Marketing Branch of Agriculture Canada are designated as government inspection agencies for certifying lots as meeting requirements. It is the responsibility of the importer to obtain necessary certification. Canada has a quota, for seed potatoes entering the U.S., of 1,140,000 cwt. Other than seed potatoes have until recently (January 1, 1987) entered the U.S. under a 450,000 cwt. quota, with a declining tariff (36.5 cents/cwt. in January 1982, arriving at 35 cents/cwt. at the previously mentioned date). Imports in excess of quota were dutiable at 60 cents/cwt. (TSUS item 137.21) Under the Tokyo Round of GATT Negotiations, U.S. tariff rates for all potatoes (including extra-quota potatoes) have been harmonized with those in Canada, currently at 35 cents/cwt. Imports of fresh potatoes must meet U.S.D.A. Plant Quarantine Restrictions (37 Stat. 31; 7 USC. 159), except that Canadian potatoes are specifically excluded (with the exception of potatoes from Newfoundland and certain parts of British Columbia).

Imports of tablestock potatoes into the U.S. must comply with grade, size, quality, and maturity provisions of Federal Marketing Order Regulations under the U.S. Agricultural Marketing Agreement Act (1937). Marketing orders for fresh potatoes are in effect in Idaho, Oregon, Washington, Colorado, and Virginia/North Carolina.

Potatoes imported into Canada are classified as seed potatoes, or other than seed potatoes. The Canadian tariff item, description, and most-favored-nation (MFN) rates of duty for 1982 and 1987 are shown in the following table.

Table 12.

CANADIAN TARIFF ITEM, DESCRIPTION, AND MFN RATES OF DUTY 1982 AND 1987

Item No.	DESCRIPTION	MFN rate of duty effective Jan. 1, 1982	MFN rate of duty effective Jan. 1, 1987
		Cents per hundredweight	
7120-1	Seed potatoes for propagating purposes, under such Regulations as the Minister (of Agriculture) may prescribe	36.6	35
8305-1	Potatoes, in their natural state, n.o.p.	36.6	35

Source: Canadian Tariff Schedules, Government of Canada.

Table 13.

CANADIAN DUTY RATE FOR POTATOES IMPORTED (ITEMS 7120-1 AND 8305-1)
1980-1987

PERIOD	CENTS PER HUNDREDWEIGHT
Pre-MTN*	37.5
1980	37.5
1981	36.9
1982	36.6
1983	36.2
1984	35.9
1985	35.6
1986	35.3
1987	35.0

* Rate in effect before 1980.

Source: Canadian Tariff Schedules, Government of Canada

Under the fresh fruit and vegetable regulations of the Canadian Agricultural Products Standards Act, fresh produce may be imported into Canada in any package commonly used for a particular commodity in the country of origin, but such packaged goods may be sold at retail only. An import permit is not needed for such packaged goods. However, produce entered in bulk containers cannot be imported into Canada without a special permit from the Federal Government*.

The discovery of the Columbia root-rot nematode, as a crop pest in the Western United States in 1981, led the Government of Canada to restrict imports of seed and tablestock potatoes from specified areas of five States in that year. The present restriction applies to potatoes grown in all of Washington and Idaho, and in certain counties within Oregon, Nevada, and California. Under certain conditions, imports of both types of potatoes are more stringent than those for tablestock potatoes, and the latter, if admissible, must be treated with a sprout inhibitor.

An important factor in assessing the trading situation for P.E.I., and Canadian potatoes, is the exchange rate of Canadian currency versus the currencies of countries with whom Canada seeks trade. The situation in the U.S. as the largest single market, is of primary importance.

* According to Canadian Government officials, certain U.S. exports of potatoes to Canada were denied entry permits as of July 26, 1982, under the Canadian Agriculture Products Standards Act of 1955. This Act has a waiver procedure as an ongoing requirement that importers of produce shipped in bulk (all fruits and vegetables) must request a permit to import such produce. Such permits are issued only when supplies are not available from local (provincial) sources. In the case of potatoes, the permit requirement does not apply to containers holding 100 pounds or less. The permit requirements for imports into a Province also applies to shipments from one Province to another.

At the beginning of 1973, the Canadian dollar was worth 0.9999 U.S. dollars. At the end of 1986, a Canadian dollar was worth 0.7197 US dollars, a 39% depreciation since 1973. The following tabulation shows changes in the exchange rate between the Canadian dollar and the U.S. dollar, associated with table potato exports to the U.S. Since January, after a further fall (below 70 cents), there has been a sharp reversal in the value of the Canadian dollar vis-a-vis that in the U.S. It has risen to more than 76.5 cents in mid-May 1987, about 1 cent higher than the situation existing in 1984, a discount slightly higher than 30%. However, it is easy to exaggerate the real impact of producer returns from this factor. (It was about 74.5 cents at June 1.)

Table 14.

EXCHANGE RATE CHANGES COMPARED TO CHANGES IN TABLE POTATO EXPORTS TO THE UNITED STATES

Year*	Exchange Rate (yearly average) Canadian dollar per U.S. unit[1]	Canadian Table Potato Exports to U.S.[2]
1973	1.001	998,354
1974	.9780	935,455
1975	1.0173	262,976
1976	.9861	459,248
1977	1.0635	727,011
1978	1.1402	722,585
1979	1.1715	1,131,333
1980	1.690	2,351,555
1981	1.1990	3,270,386
1982	1.2341	2,586,468
1983	1.2324	1,892,615
1984	1.2948	3,747,828
1985	1.3652	2,498,066**

* Mr. Allison Ramsay

** Tablestock Exports Represent Marketing Year August to July

Sources:

1. Bank of Canada Review, Bank of Canada, Ottawa, January, 1987, p. S131
2. Prince Edward Island Potato Statistical Summary, 1985, Marketing Branch, P.E.I. Department of Agriculture, Charlottetown, P.E.I., 1985, Table 28.

Differences in relative inflation rates, the drop in the value of the Canadian dollar vis-a-vis the U.S. dollar would increase, or decrease, the effect of exchange rates on the competitiveness of Canadian products in the United States. The inflation rates for the two countries, as measured by changes in the consumer price indexes (CPI's) of the two countries, show that since 1975, Canadian prices have increased 2 percent more than U.S. prices. Although the C.P.I's for the two countries are computed in different ways, it appears that changes in the U.S./Canadian dollar have been partly offset by differences in inflation during the 1980-85 period. The value of the Canadian dollar fell from 86 U.S. cents to 81 cents. A comparison taking into account inflation showed that the real rate (adjusted for inflation) actually increased the value of the Canadian dollar by 2 percent during the period. On that basis, up until 1983 (compared with 1976), the exchange rate had an impact of about 10% rather than the 23% indicated in the table. Now that the exchange rate discount is back about 30%, with continuing higher inflation in Canada, it would not be unreasonable to estimate that the effect of the exchange rate is about half that indicated by the exchange rate. Some of this would be offset by the higher impact of the U.S. tariff with the rising value of the U.S. dollar. This impact, about 12 cents/cwt. over this period, would, aside from the important elimination of the import quota, far exceed the benefit of tariff harmonization, and would further reduce the net benefit of any exchange rate gain. If the producer return was impacted by the exchange rate in real terms by about 15%, or 60 cents on a $4.00/cwt. price, then this effect would be reduced by 20% owing to the increased impact of the tariff.

2.7. P.E.I. POTATO SITUATION

The potato industry has long been synonymous with Prince Edward Island, and this has increasingly been the case. With time, as the province has increased both its share of production and become more active within the industry, the P.E.I. industry has been innovative, adaptable and willing to invest. Its role in the development of seed and seed production in Canada is primary. Its product is distinctive in Canada and abroad. Its traders are aggressive in seeking markets. They have played a primary role in the development of table and seed markets in the U.S. and abroad. Their contribution to the development of Canadian participation in U.S. count box market has been laudable. Potato dealers promote, and raise, the quality of P.E.I. potatoes. The producer institution has made its mark in defending P.E.I.'s potato interests on the national scene and in the U.S. In no other industry is P.E.I. as influential on the national and international scene.

With all this, P.E.I. production remains essentially in the hands of few larger producers, while there are many small producers for whom potato production, while important, cannot provide a living. As shown, acreage surpasses 200 for only a small proportion, an acreage which the knowledgeable feel is the minimum for a satisfactory family income. Even for those with an average acreage of 200, usually half rented, industry has not been profitable, based on available data. Acreage and production, however, have continued to expand, and yields to rise. Industry spokesman talk about producers being well off. Nevertheless, producers voted by a narrow margin against their Board, and voted to seek supply management. It may be the possibility of supply management which is encouraging growth in recent years.

The province has 83 registered dealers and about 650 production units. Interviews indicate that most dealers are marketing, if at all, primarily their own production, often to other local dealers. Some producers market to the very distributors the larger dealer ships to. In this case, the producer-dealer bargaining power being less, it is not assured that he will benefit by his action and absorb the local dealers margin*.

Many producers are appreciative of the dealer, and are happy to avoid the attendant risks of this role. Others feel that they are subject to dealer intimidation, and that they cannot pursue their legitimate producer interests without risking the access to markets which they enjoy through their dealer. Some feel they confidently can turn for assistance to their dealer in time of difficulty. Others feel only government regulation can assure fairness in the existing marketplace. The industry's producers are seriously divided.

Organizationally, the P.E.I. Potato Marketing Board has predated other similar institutions in other provinces, but, while the P.E.I. Board is essentially a promotion, markets information, lobbying board, the Manitoba Board carries on single-desk selling, the Ontario Board sets minimum prices, and the Quebec Board operates a private enterprise marketing agency selling 85% of commercial production. The major difference between the situation of P.E.I. Board, and these other boards, is that the latter have legal market jurisdiction in their major market. Shipments outside their area of jurisdiction are insignificant. The P.E.I. Board, and the New Brunswick producer institution, both of which carry out no active marketing function, represent producers far from their major markets.

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* The largest dealer sells to the largest wholesaler, based on market price less a brokerage fee. The smaller dealer will obviously not get the same price offer.

Export market prospects for P.E.I. seed potatoes have seriously deteriorated. A growing preference for small seed potatoes versus cut potatoes for seed, entry of former customers into the E.E.C., and E.E.C. restrictions against Canadian seed potatoes in potential markets, have taken their toll. Balance of payments difficulties in South America may have seriously damaged the capacity of this market to purchase hard currency product. Seed exports to the U.S. have declined. The inception of breeders' rights has brought an entirely new factor into the situation. Table market exports to the U.S., and the Caribbean remain a brighter spot.

This situation in the seed market underlines P.E.I.'s increasing reliance on the domestic market, and on table disposition. There is evident growth in the processing area in recent years, but table disappearance continues to be by far the most buoyant prospect for the industry. Growth in count pack shipments into the U.S., and in the Ontario market, has helped offset the volatility of P.E.I.'s offshore table markets.

3.0. MARKET STRUCTURES FOR P.E.I. POTATOES

The industry functions within the Canadian regulatory structure established by the Fresh Fruit and Vegetable Regulation of the Canadian Agricultural Products Standards Act (Annex II). Federal regulations are established for a Canada No 1 Grade, and a Canada No. 2 Grade, (and a Canada No. 1 Large, and a Canada No. 1 Small). Aside from being firm, undamaged, and not materially deformed, No 1 potatoes vary in size from 2 1/4" - 3 1/2 inches in diameter, and do not have more than 10% of a lot of potatoes having more than 10% of surface flesh exposed. Free from damage is defined as scab that affects less than 5% of the area of less than 50% of potatoes, or when pitted affects less than 5% of the potatoes over less than 5% of the surface area. No 1 Large can be from 3" - 4 1/2 " in diameter, and No 1 Small can be from 1 1/2 - 2 1/2" in diameter. The size tolerance at each size extremity is 5%, with 10% allowance for decay, and 10% of potatoes by weight may have grade defects.

Products may be shipped interprovincially and abroad only if they meet Canada No 1. standards, and are in packaged form. There are special arrangements for shipments of bulk and/or lower grades under detention.

The tariff regime has been described elsewhere.

3.1. LEGISLATIVE FRAMEWORK

The history of the P.E.I. potato industry is marked with controversy as the industry evolved. There is a record of plebiscites regarding the establishment of marketing boards dating back to 1950. At that time, a Board was established with ovewhelming producer support (6,723 to

25) under the Agricultural Products Cooperative Marketing Act (1939) and the Agricultural Products Marketing Act (1949). That Board was challenged in 1954, and while upheld, a proposal to carry out one-desk selling was rejected. The Board was rejected in 1957.

In 1963, a Temporary Plan for potatoes was established that was upheld in a plebiscite in April 1965. This is the current program in effect.

In 1969, the Government of Prince Edward Island passed the Prince Edward Island Natural Products Marketing Act as legislation designed to operate in parallel with the Federal Agricultural Products Marketing Act, passed in 1970. It is from this legislation that the marketing boards in operation in Prince Edward Island currently draw their authority. It was in respect to this legislation and other proposed measures, sponsored by the Federation of Agriculture (Potato Coordinating Committee), that a plebiscite was carried out in August 1972 to permit the inclusion of the Potato Marketing Plan within its ambit. This was rejected by producers by 314 to 240, when 666 of 836 registered voters voted. A proposal in October to develop a Plan under which the National Farmers Union would act as a bargaining unit was passed 415 versus 233. However, the Plan proposed by the N.F.U., under legislation passed in 1973, (the Agricultural Products Marketing Act), was rejected in a 1973 plebiscite (440 to 366). This Act differed with respect to previously proposed marketing plans in that the N.F.U. was to be the sole bargaining agent for all P.E.I. potato producers.

An eligible voter was defined in this plebiscite as one growing at least 5 acres of potatoes in 1972, with each shareholding member of the family farm corporations, or partnership, registered independently. Syndicates could designate one authorized person in writing.

In July 1975, a plebiscite upheld the existing marketing plan ((368 versus 139) of 1100 registered voters), in spite of opposition by the N.F.U.

A vote was held in April 1979 to change the current composition of the Board to eliminate all dealers. This was defeated (249 to 119). The vote, in July 1982, to gauge support for an Eastern Canada Potato Marketing Agency was supported 340 to 290. In October 1986, a vote to terminate the Temporary Plan for potatoes was supported (498 to 479) (1106 eligible voters).

An eligible voter was defined in this plebiscite as anyone 18 years of age or more, who grew or marketed potatoes, marketed 5 acres of potatoes or more, in 1985, or planted 5 acres or more in 1986, with each person holding share in a farm corporation, partnership, cooperative, syndicate, or other business group, eligible to vote.

The Temporary Plan provides for no provincial government overview, aside from the receipt of annual reports and copies of minutes. The Minister can, of course, dissolve the Plan. Attempts to implement compulsory minimum pricing in 1981 and in 1982, supposedly foundered on a lack of enforcement. Section 19, which indicated that the Marketing Board had no authority over agreements made between individual dealers and producers, posed, and still poses, a problem. There remains a difference of opinion whether the Board could have enforced the legislation by attempting to prove contravention of one of its orders. No attempt was made to pursue a formal charge in court. The R.C.M.P. declined (reportedly on the instructions of the provincial Minister of Justice) to take action requested by the Board.

The full Marketing Board authority provided under the 1969 Act, the Natural Products Marketing Act, is not favorably viewed by some producers, because of concern regarding the direct government authorities provided for over the day-to-day operation of any provincial marketing board. Indeed this latter Act permits a highly intrusive government involvement in the operation of all marketing boards.

In, and of itself, while it provides all the authorities which a marketing board might require to implement a full-fledged marketing board, this latter legislation remains flawed at least in one element, as follows:

> Part 1, Section 7, permits the Lieutenant- Governor in Council to rescind any regulations, etc... of a marketing board. This could frustrate decisions taken within the framework of a national marketing plan. This could be amended to limit such authority within the legislation to those when the actions by such a board are not in accordance with a legal order dictated under agreements undertaken within a nationally administered regime, to which the Lieutenant-Governor in Council is a signatory.

Different from the Temporary Plan, there is provision for provincial government oversight and appeal procedures.

Of great importance under any proposed legislation, is the definition of a producer. The Temporary Plan defines a producer as one who grows potatoes on his own, or others' land, in the regulated area. It defines a bona fide farmer as a primary agricultural producer who grows an annual average of at leat 5 acres, and who is not engaged in the public assembling, or shipping of farm product or produce in a commercial way. A registered producer is defined as one who is registered by the Board. The Natural Products Act does not define a producer.

New Brunswick defines a producer as one who is registered, and grows 5 acres, or more. Corporations are permitted up to 3 votes. This is also the situation in Quebec. In Ontario a producer must grow at least 5 acres of potatoes, but each unit is permitted only one vote, even if it is a corporation with many shareholders.

The designation of 5 acres as a requirement to be a producer seems to have general acceptance even though it obviously does not constitute a commercial unit. Registration of producers even at low acreages is required, if a supply management program is not to be subverted by many small unregulated producers. The designation of shareholders in a corporation as voters in plebescite to a maximum of three seems an appropriate compromise to take some account of scale. However, in order to limit voting in any plebiscite to those who have a stake in the industry, it would seem reasonable and appropriate, in addition, that all eligible voters would have been registered producers in good standing with the Marketing Board for at least one year.

3.2. INSTITUTIONAL FRAMEWORK

3.2.1. The Marketplace - Intermediaries and Trade Practises

Potatoes in Canada, and in many parts of the world, are marketed in what may be termed a classic free market environment. While this market does not meet all the criteria of the theoretical free, or perfect, market, it functions to a significant degree like a theoretical model. There are numerous buyers and sellers, and price is determined by supply and demand.

There are, however, numerous imperfections in the market, in P.E.I., for example, as elsewhere. Access to information is imperfect, and there are numerous impediments to free movement. The P.E.I. Potato Marketing Board attempts to improve information in the marketplace by recording offered prices. However, survey data indicates that there is limited confidence that the posted prices actually reflect the supply and demand situation in the market. Some producers feel that the posted price is too low, relative to the real market. Some dealers feel that the posted price is too high relative to the bulk of product movement. Some dealers feel the posted prices could be used by competitors as a basis for cutting prices.

Movement among provinces is impeded by the existence of producer institutions and government, acting to further the interests of local producers, and through the existence of tariffs, and non-tariff obstacles to product movement. In P.E.I., some producers feel free access to the market is blocked by non-economic factors, i.e. power exercised by individual dealers. Individual producers appear to be intimidated in action and word by the fear that their market access might be blocked by dealers, if they aggressively pursue their own interests. This perception on the part of individual producers is important, and is inconsistent with existence of an effective market system.

In the export market, there is active collusion to maintain export market bids. It seems reasonable to assume that there is the same collusion to avoid bidding up grower prices in filling export orders. Producers who might seek to use the urgency factor to maximize their returns, will find that they will not be invited to supply for a future order. The absence of an impersonal trading mechanism places producers in jeopardy, if they actively seek to pursue their economic interests single-mindedly. This is another area where an effective producer institution could assist producers in the bargaining process.

Dealers in P.E.I. obviously attempt to maintain offer prices versus external, domestic, and U.S. markets. Direct offerings by external wholesalers to one of the many small dealers supplying primarily their own product, while increasing the marginal return of the dealers in question, can depress the general offer price for producers marketing through local dealers. When a price offer is refused by a P.E.I. dealer, who must assemble to meet an order, a direct offer to one of his suppliers, (which would yield a slightly higher price to that supplier compared with marketing through the local dealer), could ultimately force the large dealers to reduce their offer price to all growers, in order to meet the competition. If they are to maintain their margins, and continue to be active in the market, price offers to other supplying producers will then have to be reduced.

While this is considered by dealers and others as undercutting the market, it is inherent in the normal functioning of the marketplace as it is currently structured. It is also inherent in the current dealer licensing system which permits growers marketing their own product to be dealers. For these producer-dealers, any advance on the local dealer offer price is a gain.

The dominance of a few dealer firms in Montreal and Toronto also weakens P.E.I. dealer bargaining power. If MacKay and Hughes is not buying, there is essentially no market for P.E.I. potatoes in Toronto. Similarly, although not to the same extent, the firm operated by Gosselin (Patates Quebecoises) could affect the shipment into the Quebec market. However, in Montreal there is the alternative of large sales through brokers. While there are other firms in Toronto, e.g. Lee Brokerage, Bruce Collings (Bradbro), functioning as brokers for P.E.I. dealers, if MacKay and Hughes held product from P.E.I. back, or substituted other product in Toronto, this would tend to raise the selling price for P.E.I. product in Toronto at the same time as it would tend to lower the buying price (through lack of demand) in P.E.I. (This is possible because the P.E.I. product has a unique franchise in the market with a supply/demand structure of its own).

Normally, of course, the wholesaler seeks to obtain profits from volume rather than margin gains. His emphasis is to seek regular supply for his customer, rather than speculation. Normal strategies aim to maximize market share as the means of achieving maximized returns. Large buyers would not willingly accept such manipulation, and unreliable supply, unless there was a reasonable explanation.

These situations illustrate the imperfections of the open-market system through which P.E.I. potato producers market their product. These situations are inherent in the imperfect and monopolistic state of the market for potatoes in both Toronto and Montreal. Indicated below is a figure showing the structure of distribution channels in the P.E.I. potato industry.

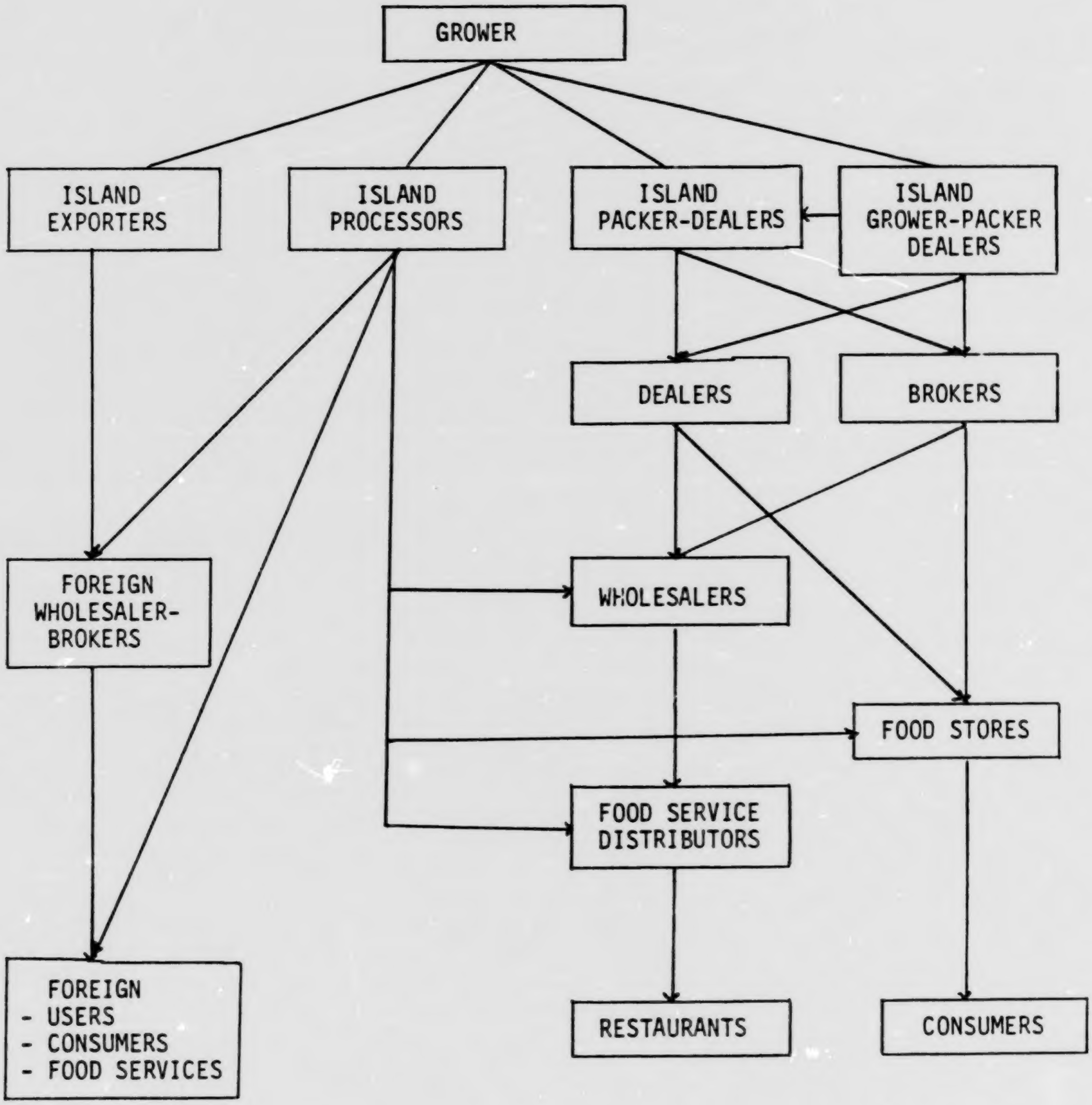
GROWER
ISLAND EXPORTERS
ISLAND PROCESSORS
ISLAND PACKER-DEALERS
ISLAND GROWER-PACKER DEALERS
DEALERS
BROKERS
FOREIGN WHOLESALER-BROKERS
WHOLESALERS
FOOD STORES
FOOD SERVICE DISTRIBUTORS
FOREIGN
- USERS
- CONSUMERS
- FOOD SERVICES
RESTAURANTS
CONSUMERS

Figure 5.

The information below details in specific terms the situation and behaviour of the various groups making up the institutional framework of the potato industry.

3.2.1.1. Local Dealers

The P.E.I. industry has 83 individual dealers, licensed by the P.E.I. Potato Marketing Board (P.P.M.B.). These dealers licensed by the Board ($400 annually, and 3 cents/cwt on shipments), are all members of the P.E.I. Potato Dealers Association. The Association nominates candidates for selection as three members of the Board. It receives a small operating budget, and has an employee of the Board to act as its secretary. The Association is, in effect, organized as a subsidiary body of the P.P.M.B.

Although there are 83 dealers, most product on the Island is moved by a few of the larger firms. The balance of the dealers shipping outside the province concentrate on moving their own production to market. In 1984-85, only 20 dealers shipping outside the province accounted for 80% of the product, more than 75% of dealers either marketed their own product through other dealers, or shipped only a small amount of assembled product. Seven dealers accounted for more than 50%, and twelve dealers more than two-thirds of shipment.

The five larger dealer operations are:

1. P.E.I. Produce Ltd. (Canada Packers)
2. McKenna's
3. Lawton's
4. Eric Robinson Inc.
5. Boyd McDonald

The two largest operations act only as dealers having no production facilities. There are five registered dealers with no production of their own. Lawton's purchases about 70% of products with the balance provided by members of the firm.

Table 15.

DEALERS SCALE OF OPERATION, 1984-85

	SHIPMENTS	% OF TOTAL	CUMULATIVE % OF TOTAL
	000 cwt.	%	%
1.	1,473.3	14.3	14.3
2.	1,112.9	10.8	25.1
3.	770.8	7.5	32.6
4.	762.4	7.4	40.0
5.	486.1	7.4	44.7
6.	454.6	4.4	49.1
7.	411.1	4.0	53.1
8.	405.4	3.9	57.0
9.	351.6	3.4	60.4
10.	293.3	2.78	63.2
11.	274.4	2.7	65.9
12.	244.9	2.4	68.3
13.	230.3	2.2	70.5
14.	185.5	1.8	72.3
15.	172.8	1.7	74.0
16.	168.1	1.6	75.6
17.	161.6	1.6	77.2
18.	142.8	1.4	78.6
19.	125.1	1.2	79.8
20.	116.4	1.1	80.9
OTHERS	1,938.1	19.1	100.0
	10,281.5	100.0	

Source: P.E.I. Potato Marketing Board

Aside from Canada Packers, and to some extent McKenna's, most agreements of potato growers are verbal and informal. Contracts are usually in force, aside from processing, only when advances are being made, i.e. fertilizer and pesticide on credit. These transactions concern less than 10% of product volume, and according to grower estimate, reports indicate they are much more widespread. Contracts which involve advances, or inputs, are considered to be a sign of financial distress by growers, and tend to be carried out in confidentiality. While there are a few contracts for future delivery signed in the pre-planting season, most contracts are signed after harvest for later delivery.

Dealers report that shipments outside the region can be unpaid for up to 90 days, and that some losses occur. However, the normal situation is for payment to be made in 30 to 45 days, while U.S. sales are often made on a 15 day payment basis. Dealers seek to achieve a 30 day payment cycle on the average. Within this framework, growers can usually expect to receive payment by the time 30 days have elasped. While some report longer waits, on the other hand, some growers indicate that they can receive money more rapidly, on request, if they require it.

Product is handled differently by area on the Island. In the East, it is estimated that 95% of the product not for processing is graded where it is grown. In the West, product is more often shipped to packing sheds for grading. This may derive from the historical presence of cooperatives engaged in this activity in the West. The presence of reliable community facilities may have discouraged the development of farm grading facilities, as developed in other areas. The standard charge for grading is $1.00 per cwt.

The grower is responsible for delivering his product, graded or ungraded, However the service can be provided for a fee. In most cases, the dealer approaches the producer, offers a price for immediate or future delivery. If the producer is agreeable, transport is dispatched. The trucker signs a bill of lading indicating receipt, and leaves a copy with the grower.

There are examples of contract for future deliveries at fixed prices. This is the case for some dealers as well, for shipments off the island. Reports from those who have had the experience indicate a lack of interest in such arrangements. They have found when there is significant variation between the contract and the market price, with the contract price being higher, they often face claims which reduce price to the market level. Most product moves on a verbal, or "open bill", basis.

The dealer's role focuses on the assembly of product for shipment to distant market. He may provide other services such as arranging transport, grading, packaging, etc... Some, like count pack operators, stream product received by its highest value uses. The bakers, or largest potatoes, would be separated for shipment in count boxes, for the food service trade, the balance processed for table use, or disposed of for cull use. Others would pack to market specifications, according to sales outlet, local, domestic, or export use, either for seed, or table consumption. This role focuses on supplying growers in P.E.I. an outlet for their product. Like his compatriot in New Brunswick, the grower, far from population centers, cannot load up his truck, and easily deliver product to the market, as can be done by many producers in Quebec and Ontario. The grower depends on the dealer, who retains a continuous contact with transporters, distant dealers, and brokers in the market area. He maintains an up-to-date knowledge of documentation (Canada No 1 grading, acquiring transportation numbers from the Board, and phytosanitary certificates and customs documents for exports, insurance, etc..). He takes the financial risk of for delivery as specified, as well as responsibility for collecting payment for product.

For about $300.00 per load, the dealer takes on the financial risk for $3,600 to $5,000. The dealer is liable for this cost, whether he is paid or not. Any problem which occurs with the product, will occur at the dealer's expense. While, as indicated, some growers perceive the dealer's job as risky and thankless, the substantial number of dealing producers indicate an attempt by some to bear their own risk, and retain the dealer margin.

Margins vary between 12 and 25 cents per 50 pound bag with the latter being the general objective. The Board reports that 50 cents per hundredweight can be used as a guide.

3.2.1.2. Market Dealers and Brokers

While there may be many, only a few are used by most P.E.I. dealers. MacKay and Hughes in Toronto, Gosselin in Quebec (Montreal), are the most important dealers. Both firm move substantial quantities of potatoes from P.E.I. No data is available on margins, but MacKay and Hughes indicate that they would be happy to clear $200.00 per trailer (i.e. 33 cents/cwt., after expenses). This compares with the standard total of brokerage charge of 25 cents per hundredweight in Montreal. The implication from MacKay and Hughes was that these net margins are not realised. The similar situation for large sales into Toronto, compared with Montreal has been indicated earlier.

While MacKay and Hughes is a wholesaler, F. Ward and Sons, in Montreal, is a broker. The result, as indicated above, is not much different. In Montreal, as in Toronto, many shipments might go directly to chains, but these, nevertheless, involve the payment of a brokerage fee. The chains prefer to deal with a broker, and avoid involvement with suppliers. In this way, the chains' buying operations are simplified, and their needs are met with just a few calls to brokers.

The role of the market dealer involves taking posession of product and accepting responsibilty for resale. Theoretically, the product purchased by a dealer does not necessarily have a buyer, when the purchase is completed. (This differs for the broker, who, acting as an agent, always has a buyer contracted to accept the product, when the purchase is made). Nevertheless, the dealer price cannot be out of line to a significant degree with the market prices being offered by the broker, if he is to be able to purchase product. This would imply that, at least for larger shippers, which means the vast majority of product, there is only a broker's margin.

Where the dealer repackages, or stores for short periods to ensure regularity of supply, or speculates on the expectation of a market gain, he may expect additional margin. Some dealers carry on a repacking activity from larger units to five and ten's etc..., acting as a wholesaler to smaller retail units.

MacKay and Hughes is reputed to market 80% of the P.E.I. potatoes offered in the Toronto market. The firm claims that it is the prime P.E.I. potato promoter in the market, and that other dealers do not make the same effort to move P.E.I. products. Reports by large dealers indicate at least two-thirds of the product they offer is directed to this firm.

There is no question that any dealer that holds such a large share of market volume from P.E.I., will find an identical interest with the P.E.I. industry expanding its market. The firm will be identified with P.E.I. product. Anything which favours the industry, will favour the supplier, and vice versa.

This should not obscure tne fact that the business interest of the dealer could on occasion differ from the business interest of the P.E.I. potato grower. The dealer wishes to buy low and sell high to increase his margin, as long as this does not impair his ability to be competitive, and achieve volume. This could encourage buying early at lower prices, holding off to keep prices low in the growing area, while permitting market prices in the marketplace to move higher.

With the firm's size in the market, such a strategy could work for the dealer from time to time, particularly during periods of price instability. Operations at the margin could be lucrative, and feasible, given the firm's large market share. However, even MacKay and Hughes could not get out of line for too long without damaging credibility. In these matters, if a thing can happen, it probably will, from time to time. An independent source of market prices, based on wholesale market prices on the market, and some watch-dog effort by a producer institution, would be of assistance in guarding against such a possibility. The current Board practise which depends only on information offered by private dealers, most of whom are selling to MacKay and Hughes, does not protect against such an occurrence.

As for the broker who does not take possession, and acts as a seller representative, growers and small dealers complain that they find that when problems arise, the broker's interaction reflects the buyers' concerns. Acting, as the broker does, for many small sellers, but moving product to only a few important buyers, the broker is forced to reflect the buyer's interest, in a dispute. This is particularly true with small scale suppliers. He can always hope to attract another supplier, but if he loses his regular buyers, of which there are only a few, he is out of business.

Below is a table indicating major continental markets for P.E.I. potatoes during 1984-1985. The importance of the Toronto and Montreal markets is evident, with Ontario and Quebec taking about 3 million and 1.5 million cwt. respectively. The data show the importance of MacKay and Hughes in the Toronto market is only slightly exaggerated. Gosselin is also very important for the Quebec region. There are other areas of concentration, in New Brunswick; in Maine; in Manitoba; in Michigan; in New Jersey; in Nova Scotia; in New York; in the Ontario region; and in the Ottawa region.

Distribution in the Montreal region through brokers masks actual wholesale distribution channels, but Ward's may account for 25% of market volume, E. Katz, some 15%, and R. Cyr about 10% of Montreal volume. Reports indicate that of the total brokerage business for P.E.I. potatoes, Ward and Sons handles 50%, Val-Queb and Katz handle 20%, respectively, and a firm called Sureway about 10%. While Ward dominates the P.E.I. business, the strong concentration would provide an element of competition for P.E.I. business.

In Ottawa, there is a major market which is essentially for processing potatoes for the fresh french fry trade during the January-July period. The P.E.I. product is sourced from processing off-grades. While generally better quality than New Brunswick product, thus able to command a premium of up to 10%, it does suffer by its off-grade nature from too many knobs, and sometimes rots. Feedback focuses on a buyer's desire for bulk shipment (instead of 75 lb. bags) as a mechanism for earlier displacement of Ontario and Quebec potatoes in this market. Special provision is available to permit interprovincial bulk shipment of such product. Obviously, P.E.I. producers prefer that first grade potatoes be used for this purpose, but such a market would probably be in large measure lost, if it could not be supplied in this form.

Shipments into Toronto and Montreal (the landed wholesale bulk (50 lb. bags) price in 1985-86 respectively $3.36 and $3.48, or $7.72 and $7.96/cwt.*), in addition to a minimum broker, or wholesaler, margin of 25-50 cents per cwt., must absorb minimum transport cost (tri-axle trailer) of $2.00 and $1.54 per cwt. This would have yielded $5.72 and $6.42/cwt. respectively to the dealer. The producer would have faced additional charges of 50 cents and $1.00/cwt. for dealer services and grading.

* Allison Ramsay, P.E.I. Statistics Service, P.E.I. Department of Agriculture. A simple average of month-end prices in Toronto and Montreal.

Table 16.

P.E.I. SALES OF POTATOES, BY SELECTED REGIONS, AND IMPORTANCE OF MAJOR BUYERS, IN 1984-85*

		NO OF SIGNIFICANT BUYERS		
MARKET	DOLLAR VALUE	TOTAL	$5000+	SHARE OF LARGEST BUYER
Toronto region	2,422,926	29	15	72%
Montreal region	914,742	53	37	10%
New Brunswick	888,866	49	17	61%
Nova Scotia	805,505	60	19	33%
Ont. region	523,491	59	22	23%
Massachusetts	456,286	36	17	18%
Quebec region	431,817	58	17	31%
Maine	389,743	17	7	62%
New York	267,277	33	13	33%
St. John, Nfld	263,346	16	9	27%
Newfoundland reg.	178,971	32	10	21%
Pennsylvania	151,132	17	8	24%
Manitoba	127,534	4	3	89%
Ottawa	115,132	17	4	53%
New Jersey	99,234	15	4	56%
Florida	63,869	21	4	22%
Michigan`	56,741	3	2	85%
Connecticut	53,415	14	2	43%
Delaware	29,445	9	4	22%

*Source: P.E.I. Potato Marketing Board. Markets with sales of less than $20,000 not included, e.g. Alabama, Alberta, Gaspe, Maryland, Missouri, Montana, North Carolina, North Dakota, New Hampshire, Tennessee, and Virginia,

3.2.1.3. Exporters

The Export segment, which usually takes in out-of-country movement, is in P.E.I. used to designate primarily the off-shore movement. This activity includes a small number of large operations indicated below in the approximate order of magnitude. This could change from year to year.

1. Visser Produce
2. P.E.I. Produce
3. Island Shipping
4. H.B. Willis
5. Gulf Produce

These firms compete, but also collaborate, in the winning of export orders, which are primarily for seed. It is reported that there is usually agreement between these houses as to who should bid in order to gain the order, and cooperation in filling any order gained. In the past, there were a number of other firms involved in the role of assemblers. Although they could not hope to successfully bid for an export order of their own, they could participate through supplying a share of the export contract. These assemblers function for a fee of about 25 cents/cwt.

Over time, these assemblers have been eliminated by the competition among them, and by direct efforts by the exporters to organize supplies. Contact and collaboration among the major exporters, or by direct sales attempts of individual growers, has essentially eliminated the assembler function. Major exporters, however, continue to act as assemblers for each other.

The exporters report that they seek a margin of about $1.00 per hundredweight, which is about the same as grading cost. While this appears to be low in relation to the high risks associated with export shipments, another exporter reports an objective of 7% of the landed price. With a price of CDN$ 500.00/metric tonne, and a margin of $1.25/cwt., the information available appears to confirm the order of magnitude of the indicated margin level.

In the United States, the major shippers are all active. Most use a combination of direct shipment to wholesalers, and/or chains, (retail and restaurant), and shipments to brokers. Aside from the major markets, in New York, Boston, and Philadelphia (indicated in Table 10.), Canadian potatoes are widely distributed. P.E.I. dealers ship Russets as far away as Texas in some years. Dealers like MacKay and Hughes, and Ward and Sons, are also active in this trade. The significant number of important purchasers in New York, Maine and Massachusetts (Boston) is a measure of the degree of penetration in these centres. Sales are generally through wholesalers and brokers rather than direct to major client. However, there are a few direct chain accounts according to wholesalers.

In the Boston area, P.E.I. product has a broad franchise, round whites, Russets, and count packs, depending on the supplier. The product sells for a premium (10-20%) versus Maine (round whites), and at a substantial discount relative to Idaho Russets. There is much competitive advertising, and in a market which is stable and growing, the need for additional quality advertising is perceived. Washington potatoes are the cheaper Russet competitor.

In New York and New Jersey, P.E.I. potatoes are recognized as a premium quality product, and command a premium, but faces tough competition from other suppliers, including New Brunswick, and, this year, Colorado. In the table market, Maine and Long Island are strong, but the P.E.I. product commands the quality edge. New York is a major count pack market, and P.E.I.'s are discounted versus Idaho's. Although they usually have matching quality, the Idaho image is their most valuable asset, and is strongly supported by advertising. Markets are growing.

A significant portion of the U.S. market is made of Count Packs which are delivered directly to restaurant chains, or through brokers. U.S. table export market, is made up of shipments of round whites and Russets for the table market, and the latter for the count pack trade. Canadian shippers must overcome market costs of 87.75 cents/cwt. (US$ 0.25, 0.35, and 0.05 (at a 135 rate) for brokerage, duty and entry costs, rspectively), in addition to transport costs of $3.15/cwt. to Boston, $4.15/cwt. to New York, and $4.55/cwt. to Philadelphia. This means a cost of about $2.00 per 50 lb. bag, or carton, to Boston, and $2.50 to New York. These margins would have been required in 1987, in the U.S. markets, relative to the P.E.I. shipping price, before they become more interesting than those in Canada. Comparable costs to Toronto are about $7.25/50 lb. bag.

The Role of Potatoes Canada, oriented primarily to the seed export business offshore, has been the subject of controversy. Financed primarily by contributions from the federal government, with contributions from the provinces of N.B. and P.E.I., and levies from exporters, the institution has struggled. Staff turnover, underfinancing, as exporters, have withdrawn support, and confusion and controversy as to role in relation to federal government initiatives, the organization is reportedly in disarray. An interview was declined. With its small promotional staff abroad of 1.5 persons, we are no match for the massive effort financed by Dutch enterprise, involving dozens of circulating staff.

3.2.1.4 Retailers

The role of the retailer is to take possession of the product, and to distribute the product in to small quantities, in appropriate packs, to be offered to consumers through convenient retail outlets. In the case of the chain, these could be many outlets spread over a wide geographical area. The retailer must bear most of the risks associated with product deterioration. If he cannot turn over the product quickly enough, he could experience loss and shrink, and be forced to absorb the attendant losses involved in spoilage, re-packaging, or theft. He must accept a certain percentage of loss associated with these elements, since he ultimately retains any product which is unsold. His margin arrangements are designed to cover these risks, and are the most substantial in the distribution chain.

Retail spreads are (calculated based on the selling price) usually about 35%. That is, the retailers gross margin is more than 50% of his landed costs. For specialty packs, the margin increases to 50% of the retail price. On the other hand, when potatoes are used as a loss leader, the price may be at, or a penny above, net landed cost.

There is strong price leadership in the retail trade. While retailers will special a product unmercifully, they tend to take turns with an item. They tend to avoid head to head price competition, except on major holiday occasions.

The evidence is that P.E.I. products sells at premiums in the wholesale market. This may persist at the retail level, even when the wholesale cost is the same, or only very slightly different, (e.g. March 15, 1987, Montreal:- Quebec 10's - $2.10; P.E.I. 10's - $2.69; Toronto:Ontario 10's - $2.09; P.E.I. 10's - $2.29). While P.E.I. and Ontario potatoes were the same price in Toronto at the wholesale level, they may have been only 10 cents apart in Montreal.

These differentials play an important role in chain space allocation. The struggle for space allocation in supermarkets is an activity which to an important degree defines the market competition among suppliers of similar products in North America. This activity exercises most suppliers in the food market, and indeed the general consumer market.

For most items, shelf space is earned in a variety of ways: promotional allowances, payment terms, advertising monies, etc... Even with all these, if movement does not meet certain volume standards, the product is eliminated from the shelves. With the proliferation of many seemingly identical packaged goods, brand manufacturers are easy targets.

For fresh product, while there is not the same promotional pressure, there is not the same product recognition. Consumers do not often demand product from specific origins. Product is perceived as more identical and substitutable. With perishable products, promotional practises tend to be limited to demands by retailers for special prices, associated with the high volume, accompanying loss leader promotion. Once offered to one retailer, these allowances must legally be available to other purchasers with volume being the only acceptable discriminating criterion.

P.E.I. potatoes are among the more unique products. They have a market identity in many markets, most certainly in Canada. Their absence from the market would be noted, and objected to. The premiums paid for P.E.I. potatoes indicate a discrete demand schedule in consumers' perception. Consumers are willing to pay more for P.E.I. product rather than accept a substitute. P.E.I. potatoes have a brand identity.

The bottom line for the supermarket and food store operator is how much dollar margin is produced by the space provided to display the product. P.E.I. potatoes have historically provided premium rewards, because of the public perception of the product as superior, sustained by consistency, higher quality compared with the competition. The product retains a consumer franchise. This ability to produce gross margin dollars, has led to the allocation of a large share of available display space.

The experience with loss leaders for New Brunswick potatoes is instructive. The New Brunswick product did not have a quality image, and loss leadering further reduced the producer or dealer incentive to produce a quality product. In the longer run, the absence of margin earnings from New Brunswick potatoes eliminated the retailer's profit incentive to provide continuing display for the product. The consumer perceived they needed a special price to get equal value for their money. If the competition offered N.B. potatoes at very attractive prices, other retailers were forced to stock it to compete. On the other hand, continued specialling of the product made retaining it much less interesting, and discouraged sales of more profitable packs.

After a time, consumers could only be persuaded to buy the product on a special price basis. The retailer found that he could get the same effect, and respond to the political pressure he faced, by promoting local product. He used Ontario, or Quebec, potatoes, for the specialling role during the harvest season, when most specialling occurred.

At the same time, available P.E.I. potatoes, also prominently displayed, offered some margin income which, although diminished, continued even through the specialling period. In Ontario, P.E.I. potatoes are provided the lion's share of available space. Even in Quebec, where an alert public actively supports the display and sale of Quebec product, and not too subtle pressure is exerted by government officials to ensure the display of Quebec potatoes, P.E.I. product routinely holds 50% of available display space. Fairly early in the new year, little local product remains, and until the early U.S. crop arrives at prices up to four times those from P.E.I., Island potatoes have the bulk of the market.

The produce counters in North American retail stores have witnessed a merchandising revolution over the past ten years. The trend toward natural products, which first appeared, in the 60's, came to maturation in the 70's as these young people became an important element of the consuming public. Natural food stores proliferated. In the supermarkets, to compete with this phenomenon, display space for fresh produce, and bulk foods, exploded after decades of being gradually reduced, and pre-packaged.

Today, large portions of the produce display are offered to the public in unpackaged form. A significant portion of retail display space is taken up with the loose display of fresh vegetables and fruits. Potatoes have shared in this revolution. Now, washed, cleaned, and carefully selected, they are sold loose to consumers for individual selection at prices equal to 60 and 70 cents per pound. This occurs at the same time as packaged product is being merchandised at 30 to 50 cents per pound. While loose volume sale continue to be relatively small compared with packaged volume, the development of potato merchandising has become increasingly complex and profitable. By corollary, potato specialling in packaged form (particularly in 50 lb. bag form), has become less important in total movement. In addition, specialling of loose potatoes at relatively high prices has begun, in the same way as occurs for apples and tomatoes. The potato has achieved more status and respectability. This has important implications for the merchandising and development of the P.E.I. brand identity.

3.2.1.5. The Processors

The major processor in P.E.I. is Cavendish Farms, which based on the recent data, is absorbing, with other buyers, 15% of the marketable production in the province. Production from about 18,000 acres services the plant, double the figure in 1984. Producers are usually located within a 25 to 35 miles to the plant.

Cavendish Farms produces about 20% of its requirement on about 2,000 acres. Cavendish Farms represents a well- known corporate entity (Irving Pulp and Paper Ltd. of St. John's, New Brunswick), associated with the K.C. Irving enterprises. This has been the case since 1980. Potato processing has been carried on in P.E.I. since 1960.

The plant on the island is located in New Annan. It comprises an area of 460,000 square feet, reportedly capable of processing 4 million hundredweight of potatoes per year. The firm claims to employ 600 people on an annual basis, and to generate 600 to 700 indirect jobs, paying out 26 million dollars annually in wages, salaries, and supply purchases. It has a storage facility for raw product, capable of receiving 50,000 cwt., (sufficient to supply the operation of about 7 weeks). Most of the stored product (65%) derives from company operated acreage devoted to assuring that the quality of the product received for use during the Summer months will be acceptable.

In addition to sales of processing potatoes to Cavendish, significant shipments of processing potatoes are made to New Brunswick. These are either purchased by McCain's or purchased by chip plants in New Brunswick. McCain's is the chief New Brunswick buyer of P.E.I. potatoes. There have also been significant shipments of P.E.I. processing potatoes to Carnation, in Manitoba.

Most recently, a small cooperative potato chip operation has been launched on the Island, as well. This has the potential (16 employees) to expand. Such small scale ventures have the potential to increase utilization of otherwise cull potatoes for chips, fresh french fries, peeled small potatoes etc..

There are potato shipments for chipping to Humpty Dumpty in Hartland, New Brunswick, and to Hostess, in the Annapolis Valley. There is a plant under construction in Moncton by Frit-o-Lay, which would provide an additional market. There is additionally a limited potential demand for small potatoes in Pennsylvania, and for the shipping of Russet Burbank, Norchip, and Atlantic, for french fries purposes, into the U.S. There is an occasional market for processing potatoes in Belgium, Germany and France.

The major criticism refers to the reported inconsistency in grading. There is no processing grade, but Cavendish Farms uses a measure termed "raw product acceptance criteria". In addition, the U.S.D.A. Colour Standard Chart is used in grading. There are also standards for specific gravity, defects, hollow heart, rot, sunburn, off-type, frost, sprouts, and foreign varieties. All the grading is carried out by employees of the processor. Producers have the right to call for government inspection. It is obvious, however, that producers would fear that if they call for a re-inspection, they might be refused eligibility for a contract in a future year. Consequently, this is no safeguard. The right of intervention by an independent third party, perhaps a knowledgeable Board employee, would be required to remove the current perception by some that the processing grade is subject to adjustment based on market conditions. There is also the additional perception that the company exercises its power to purchase from whom it chooses to punish individuals for their views regarding the potato industry, and the desirability of a more militant producer organization to advance the producers' interest.

Prices for product (Cavendish) are determined in negotiation with the P.E.I. Potato Processing Council, which according to the Board, represents about 70 producers. The Council is made up of one representative per county, and six members at large. This Council negotiates with the processors, and subject to a vote by producers, accepts or rejects the negotiated price for processing. If no agreement can be reached, individual negotiation with producers for the delivery of the product cannot occur until the following August 15th. This clause has never come into force. The contract is usually negotiated in the Spring prior to planting.

Information from producers indicates that all relationships with Cavendish are formal, based on contracts. Payments under the contract, while supposedly on a thirty day basis, are reported as being much longer in practise. Producers give conflicting reports of the company's observance of contracts. Some indicate that when the market price is less than the contract price, they face heavy adjustments in the level of culls in the product that they deliver, which have the effect of lowering the average price of the product. Other producers indicate that this has not been their experience.

The processing potato, although marketable in either the table of seed market, is different than the traditional product available for the table market. The processors desires a maximum solids content and as large a potato as possible to provide a long french fry. This requires the planting of certain strains and varieties and the application of certain agricultural practises.

In addition, the colour the french fry achieves when fried, depends on the sugar content. This factor is controlled by storing the product above 46-47 degrees. Lower temperatures turn the starch in the potato to sugar, resulting in a dark and undesirable french fry. Normally, seed and table growers will store their product at much colder temperatures to encourage extended storage. The seed grower attempts to keep the size of this potatoes small and uniform. Similarly, this makes the potato undesirable for the processor. These factors encourage the processor to contract.

Increased imports of frozen french fries in the U.S., and increased per capita consumption of frozen french fries, have encouraged production. Both french fries consumption and the volume of consumption in the form of chips, has increased over time, as indicated earlier. Use of potatoes in the chipping industry has increased from 444 million pounds in 1980, to 592 million pounds in 1986, an increase of about 22% during this period.*

There remains the issue of open market purchases. The processor argues that depressed prices could place processors in non-competitive situation, if they did not have the flexibility to buy some product in the open market. Processors do not have this privilege in Ontario.

* Submission of the Canadian Potato Chip Snack Food Association, to the Enquiry on merits of establishing a marketing association for the potatoes, the National Farms Products Marketing Council.

Some argue that this is what drove french fry manufacturers out of that province. This argument would be eliminated with an administered price. In any event, if the special care required to prepare processing potatoes is that crucial, how can processors take ordinary product from the market?

Producers are also concerned about arguments regarding transportation cost which processors face in bringing processed P.E.I. product to major markets. Wholly-owned corporate trucking fleets may be earning non-competitive rates which are used as an argument for lowering producer returns.

The possibility of a marketing agency is opposed as likely to make Canadian processors non-competitive, or worse, preventing exports. Entry of competitive product would, of course, be limited to historical experience, and any agency could make rebates from levies relative to established cost differentials in other markets for that portion of processed product exported.

3.2.2. P.E.I. Marketing Board

3.2.2.1. Introduction

The Board, which grew out of a Growers' Association founded in 1922, functions under the Temporary Plan regulation. The Board is made up of representatives from each County, yielding a board of six producers, and three dealers. At least, three of the producers ship some product from other producers. Each individual serves on the Board for three years, with one-third of the Board retiring each year. The Board usually meets monthly. Minutes and monthly reports, and Board orders, are provided to the Minister of Agriculture. The President of the P.E.I. Potato Producers' Association attends meetings on an ex officio basis. There are six Committees of the Board, as follows:

1. Elite Seed Farm
2. Licensing and Marketing
3. Finance and Advance Payment
4. Transportation
5. Promotion, and
6. The Processing Council

3.2.2.2. Major Board Activities

3.2.2.2.1. Elite Seed Farm

The administration of the seed potato aspect of the industry is a priority activity of the Board, since over 85% of potato acreage is certified. The Board administers the administration and payment of seed incentive bonuses for infected crop disposal, and approved seed replanting, under a program administered under the Ministry of Agriculture, of the Plant Diseases Eradication Act of 1974. The Board Manager serves on the Disease Committee, it receives an agricultural grant to provide a coordinator for disease control efforts.

The Board operates the Elite seed farm (550 acres), designed to purify seed potatoes, and provide foundation stock for about 50 Elite seed growers. The Board administers contracts with the Elite seed growers. There are 75 varieties propagated. It is responsible for variety allocation, production allotments, grower education, and the negotiation with government on protected varieties. It represents the industry on local, regional, and national bodies, carries out varietal testing, and represents the industry in relation to chemicals, and their effects on insects and diseases.

Most observers believe the Board's seed potato function is among the most successful of the Board's activities, and ensures that there is a priority relative to advancing seed quality and the industry's competitiveness. These people often believe that government cannot be relied upon to provide consistent support, necessary for success in this effort. Others believe that this responsibility properly belongs with government, as is the case in most other provinces. They believe it adds unnecessarily to producer costs, and distracts the Board from its more proper activities. These latter, however, who see only a minimal role for the Producer Board, are generally dealers, or producer-dealers. They believe that the Board staff and activity should be shrunk to a minimum when producer returns decline.

There appears to be valid argument for seeking additional government support for seed farm activities. The producer cost involved places P.E.I. producers at a competitive cost disadvantage with regard to other Canadian producers. At the same time, the efficiency and priority arguments appears valid, i.e. the Board can do the job more economically, e.g. New Brunswick, while assuring program priority, and continuity, in the industry's interest.

This is an area where the natural dealer long-term interest is identified with, and should support the utmost effort to advance P.E.I. product quality. While they may have mixed feelings about breeders rights, dealers have an enormous stake in maintaining product quality in the province, and strong regulations to ensure its policing. It may be that this objective could be more effectively pursued by dealers, if they were not seeking to mask the advance of their interests as part of the Board.

3.2.2.2.2. Licensing and Marketing

The Board registers all producers, and licences dealers. No product can be shipped off the Island, without receiving a transportation number from the Board. The Board requires that each shipper provide basic information on quantity, price, and destination of product shipments. The original objective of this policy was to put an end to consignment selling. However, this activity provides producers and dealers with a mechanism for monitoring the current price in all markets for P.E.I. potatoes by various packs, size, and type of market. The most important by-product of this system is market information. This information, which is provided by phone, must be verified within 7 days by the receiver of the original invoice. The Board does little to develop its powers to gather, and disseminate information. Its powers atrophy from lack of use.

Efforts in 1981 and 1982 to implement a minimum pricing system failed to generate sufficient support. Opinions remained divided as to whether the Board could have done more to enforce this policy, as does opinion regarding the desirability of this practise. An earlier Board, which attempted to introduce one-desk selling, was rejected.

While the Board has a regulatory mandate, there was no evidence available of significant regulatory activity on the part of the Board relative to marketing practises. Most regulatory activity carried out by the Board relates to ensuring that seed regulations are followed, and levies are collected. There is some indication not all levies are collected. The manager reported two instances of license cancellation during his long tenure.

The use of the term marketing in the Board's name, and the marketing mandate described in the Board's powers, implies a direct marketing function for the Board. In fact, although it carried out a facilitative function, for the industry, providing a forum for dealers, for negotiation of contracts for processing, providing information on pricing, negotiating to minimize transport costs, promoting P.E.I. potatoes,and defending and/or promoting their marketability, it is not directly involved in the marketing process. This leads to dissatisfaction on the part of some producers. Some wish the Board to intervene directly to positively influence grower returns. While the Board has attempted to use regulatory powers to price, it has not fostered voluntary activity to improve the producers' bargaining position, e.g. marketing cooperative, or corporation. This is something which would likely be opposed by the dealer element on the Board.

There appears to be valid argument for strengthening the Board's information input capacity through the gathering of additional and independent price information. The authority of the Board to gather information, and enforce license requirements, may be more a matter of having the will to exercise existing authorities.

The presence of active dealers on the Board creates an inherent conflict of interest, and prevents the single-minded pursuit of producer interests within the system. While there are many elements of joint interest which a purely producer board could pursue, specific producer interest would be likely ignored, or avoided, if there is a dealer-dominated board. This may be the situation given current producer apprehension, regarding the producers' freedom of action, both on the Board, and in general.

The situation has not been improved by the presence of the N.F.U. Their doctrinaire approach is easily rejected in some circles, and provides a convenient label to apply to, and dismiss, anyone expressing valid dissent, and seeking reasonable changes in the system.

3.2.2.2.3. Finances and Advance Payment Program

The Board is financed primarily by levy collections from producers and dealers, 7 cents and 3 cents per hundredweight respectively. There is little to prevent collusion among dealers to ensure the cost of the dealer levy is passed back to producers. In addition, all dealers pay a $400.00 license fee. The

Board has the authority to ensure information access to verify that satisfactory levy advances are being carried out. There were no reports of the necessity for legal action to ensure information access.

In addition to levy revenues, the Board is the recipient of a number of grants associated with work carried out.

These include:

- Seed farm grants

- Research Centre Grants from Federal Government, 2 persons, plus one part time, at a cost of $180,000 over three yers.

- Disease Control Project, with federal government, involving a coordinator, a secretary, and a fieldman, plus four lab staff under federal supervision, at a cost of $415,000 over three years.

Total federal and provincial programmes involving 24 projects will have generated grants of $3.4 million during the 1984-1989 period.

The total Board budget for 1986/87 was $1.228 million, an increase of $158,000 over actual experience in the previous year. Of this, $149,000 was made up of grants (about 12% of the total budget, the same as the previous year). During 1985/86, the Board experienced an excess of expense over income of $242,000, reducing its surplus at the end of the year from $564,100 to $322,100. This resulted, in spite of efforts by the Board to reduce expense. It flows directly from a decline of over $338,000 in revenues, primarily from levies, associated with the substantial diversion of product from the market during this year.

Up to the end of January, revenues were exceeding comparable revenues of the previous year by over $140,000, indicating the real possibility that a balance may be achieved in the current fiscal year. Expenses to the end of January were less than those for comparable periods in the year earlier period by about $30,000.

The advance payment's program, administered under federal legislation, permits producers to receive advances on harvested products remaining unsold. Monies are received in November-December, and must usually be repaid by July 31st. In the last year, this was extended to October 1st. During the 1986-87 program, about $6 million were advanced, a much higher figure than that experienced the previous year. This was a consequence of the income problems which many producers faced during the previous marketing year. The Board is responsible for only 10% of any losses (90% guaranteed by the government), if the Board makes every effort to ensure producer repayments, and complies with government regulations. Under this program, monies are dispersed by the Secretary-Treasurer, and collected by the Assistant General Manager.

Some feel this program is too controversial, and inevitably generates producer hostility to the Board. Other feel it is being administered too rigidly, and should be advanced based on crop ready for harvest. Some dealers and producer-dealers object to the advance payment program, as undue interference in the economic process. They would like to see producers in financial difficulty eliminated from the industry (thus reducing volume). Some believe, because of the opposition the Board must face in carrying out its loan collection responsibilities, that it is too controversial.

This program is important to producers in maintaining their competitiveness vis-a-vis producers in other areas where this program is available, and larger operators with easier access to credit. The predominance of small scale potato operations on the Island provides an additional argument for using existing legislation to make available economic benefits to P.E.I. producers. The failure to use the advance payments program would place small P.E.I. producers at a further competitive disadvantage vis-a-vis other Canadian producers, not to mention local large-scale producers. In spite of the potential negatives, the Board would be remiss in its responsibility to the industry, if it did not act to place the advance payments program at the disposal of potato producers.

3.2.2.2.4. Transportation

An important, and crucial, element of the marketing of P.E.I. potatoes is the transportation of potatoes to distant markets. The nature of the P.E.I. industry dictates a dependence on efficient, reliable, and economic transport. The Board properly takes a very active part in negotiating transportation issues before National Regulatory Bodies. It allocates experienced senior personnel to this task, supported by the marketing person on staff.

The Board has reportedly played a key role in ensuring that Maritime producer interests are protected, in the minimizing of transport rates, in the protection of producers access to existing to transport assistance, and in developing facilities to maximize the industry's access to markets. There is testimony on the part of representatives of transportation bodies that the Board has played a key, and effective, role in protecting industry interests. Since growers are residual recipients of market proceeds, any success would directly affect producer returns. They are currently fighting confidential negotiated rates, which they fear large companies may seek to negotiate to the detriment of P.E.I. potatoes, and local dealers.

The Board has been subject to criticism regarding the financing of two loading docks on the Island, which are used by a limited number of dealers, and have proved to be uneconomic. They have further been criticized, because in some cases, they failed to completely prevent increases in transport costs. No effort has been made to explore whether charges that the processor may pay uneconomic rates for corporate transport of their frozen french fries, force producers to pay this higher cost through negotiations with the Processing Council on producer contract prices.

3.2.2.2.5. Promotion

The Board carries out an extensive promotion program, partly financed with small government grants. The cost of advertising and promotion amounted to about $400,000, in 1985/86, (including money for national promotion), about equal to total administration cost. Promotion is a major thrust of the Board's activity. The promotion program is focused primarily on radio advertising in Toronto and in Montreal, with some monies expended on trade magazine advertising, and to maintain contact with promotional activities through the trade in Toronto, Montreal, and Boston. This budget is tiny in relation to the P.E.I. industry's marketing.

Feedback from suppliers in major markets indicates a strong awareness by the trade of the promotional support being provided for P.E.I. potatoes. An independent assessment of the impact of the Board's advertising shows very strong levels of awareness, indicating that existing advertising had some effect. Awareness matched that for local potatoes and exceeded that for N.B. and Idaho potatoes. Awareness in Quebec exceeded that for local potatoes for a time. Advances are indicated for local, and Idaho, potatoes indicating increasing penetration. Nevertheless, awareness of P.E.I. potatoes shows increasing share in the Toronto and Montreal markets. P.E.I. faces an increasing challenge from Quebec potatoes, and declining interest in that market for N.B. potatoes. It has particularly heavy support among heavy users. Quebec benefitted among light users from their own advertising support.

P.E.I. has improved, or held, its position relative to consumer perception as to the Quebec English market, and, except in French Quebec, far exceeds all others. The data do show significant declines in frequency of serving in all markets. This shows the importance of increased advertising support, particularly in Quebec. The Ontario share declined slightly with a shift in advertising monies to Quebec, leading to increased share there.

In the last fiscal year, in addition to interaction with the trade, and to direct consumer publicity, the industry has been represented in eight trade shows where the industry's product was exposed, and in market visits in Montreal, Toronto, and Boston, in November and in January, as well as in New York, in March. Major buyers in U.S. export markets were aware of promotion support.

The promotion program is critized by officials of the Department of Agriculture as having no definition of objectives, of being misspent on activities which yield little promotion return for expenditure, having too much reliance on the advertising agency, rather than using the Agriculture Department's promotion, and for being too costly. He admits the Board has used the Development Agency's resources. Our review indicates a generally effective program given the limited funds available. More direct participation by dealers could yield additional funds.

Dealers are more likely to appreciate to a greater degree than growers the importance of promotion. Their influence is evident in the importance of these expenditures. However, the presence of dealers, or pseudo-producers, on the Board, leaves it open to charges of conflict of interest in the allocation of promotional monies. There is no evidence of cost-benefit analysis on non-advertising expenditures. There is no definition of objectives in this area, as there is none in other areas of Board activity.

3.2.2.2.6. Processing Council

This activity focuses on the negotiation with the processors relative to price. The Board provides a small budget, and a senior Member of its staff as Secretary to the Council. The processor critizes the Council in that it feels that the Council should have the authority to make a decision on the processor offer, rather than having to submit it to a vote of producers. The processor also feels that only growers that have signed contracts should be permitted to vote on the proposals. Owing to the seasonality of the Processing Council activity, the resources required for its implementation are less important than some other Board activities. Members of the Processing Council erroneously feel they do not benefit from promotional expenditures. They feel that more effort should be expended on processing potato research. The provision of independent Board representative grading overview and to request regrading were indicated is a significant issue, which has not been raised.

3.2.2.3. Board Organization

The Board meets monthly, and its members serve on its various Committees. Three Directors serve on each Committee except for the Processing Council, which has only one Board representative.

The Board is made up of the following personnel:

- Elmer MacDonald - Chairman, producer (1/7 share of dealer Mid-Isle Farms), Prince County;
- Wilfred Newman, producer, Queens
- Don Allen, producer-dealer, Queens - does not assemble
- John MacDonald, dealer, Kings County
- Harold Muttard, dealer, Prince County
- Morley Smith, dealer (H.B. Willis), Queens County
- John A. MacDonald, producer, Kings County
- Alvin Keeman, producer-dealer (does not assemble), Kings County
- Winburn Harris, producer, Prince County

The current Chairman is active. His instructions direct the Manager to refer all public representations to the Chairman. The Manager has neither the authority to hire, or fire. Individuals on staff sometimes receive work instructions directly from Board members. The Chairman draws up the agenda. It is not distributed to Board members in advance. All Board members do not feel fully involved. Producer members are fearful of speaking out.

All senior staff members, with one exception, have been with the Board at least 5 years, or as long as 17 years. The current Manager began his work on a part-time basis, and has been a full-time Manager for over a decade. He has no professional training. There are no job descriptions available to staff and no performance evaluation procedures. No annual plan is prepared.

The senior staff is as follows:

- Don Anderson, General Manager
- Marion Partridge, Secretary-Treasurer
- Floyd MacLean, Assistant General Manager, Advance Payment/Levy Officer
- G.J. Fougere, Marketing and Transportation

- Roland MacDonald, Quality Control, Fieldman, Promotion
- Allan Parker, Elite Seed Farm
- Ewen Campbell, Elite Seed Coordinator

There is no formal organization chart. Although there is an Assistant General Manager, he has no authority over staff. The following represents staff organization.

P.E.I. POTATO MARKETING BOARD ORGANIZATION

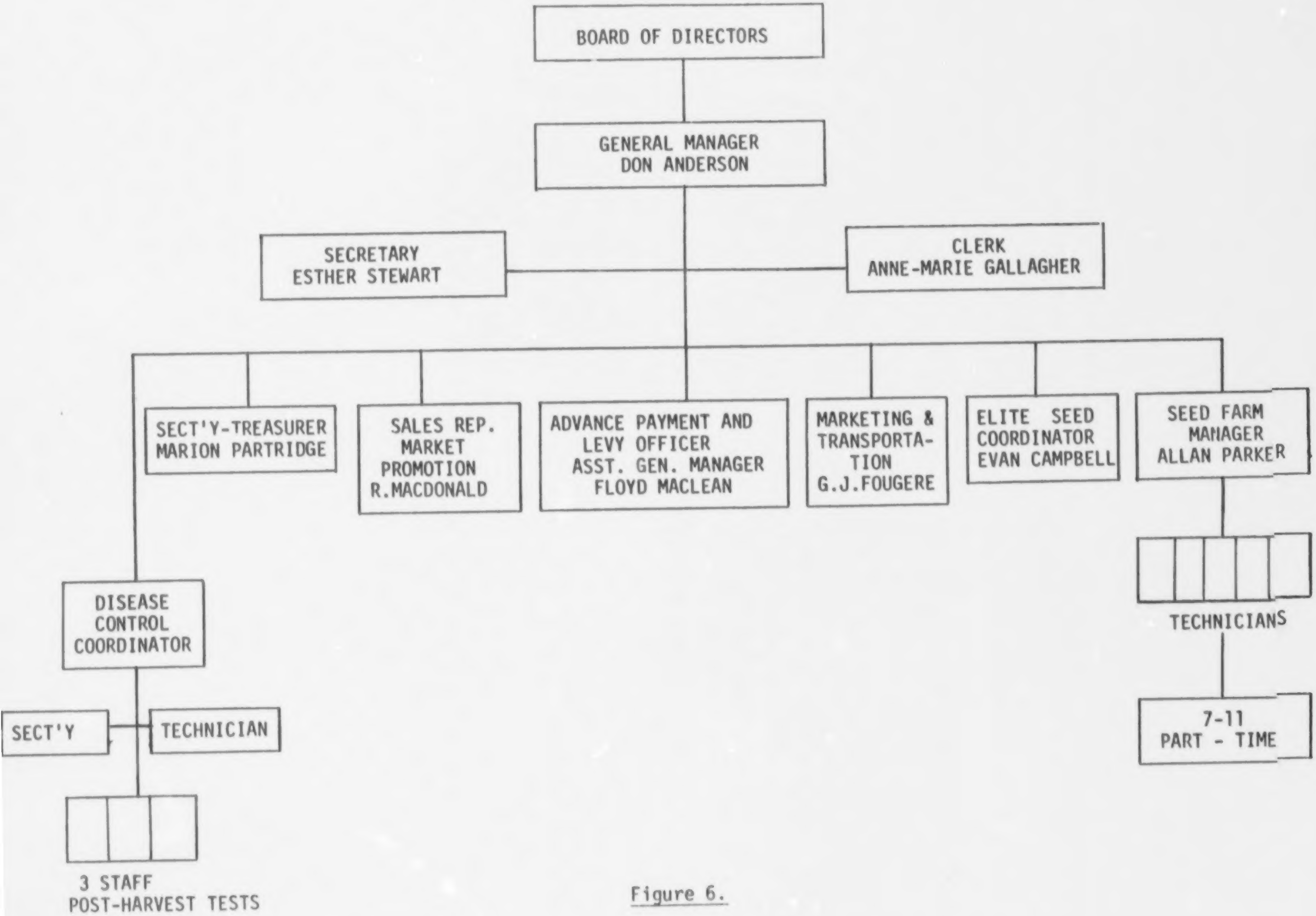
BOARD OF DIRECTORS
GENERAL MANAGER DON ANDERSON
SECRETARY ESTHER STEWART
CLERK ANNE-MARIE GALLAGHER
SECT'Y-TREASURER MARION PARTRIDGE
SALES REP. MARKET PROMOTION R.MACDONALD
ADVANCE PAYMENT AND LEVY OFFICER ASST. GEN. MANAGER FLOYD MACLEAN
MARKETING & TRANSPORTA-TION G.J.FOUGERE
ELITE SEED COORDINATOR EVAN CAMPBELL
SEED FARM MANAGER ALLAN PARKER
TECHNICIANS
7-11 PART - TIME
DISEASE CONTROL COORDINATOR
SECT'Y
TECHNICIAN
3 STAFF POST-HARVEST TESTS

Figure 6.

Senior Managers seem to be hard working and conscientious, and in most cases appear to have commitment to the organization. This exists in spite of an organizational approach which can only be termed as chaotic.

The following further observations can be made about the way the Board organizes its work.

1. An organization study, carried out in 1983-84, recommended the recruitment of two managers, one for sales promotion, the other for administration, to divide the responsibility being borne by the General Manager. The Board hired one manager (without consulting the General Manager) for marketing and transportation. This just added to the load on the Manager. This had not been corrected.

2. The Board was critized for a failure to formulate clear-cut policy. This situation has not changed. This is clear in the major question of supply management, where the Board has taken no position in spite of a positive vote from the Producers' Association. The situation probably relates to the dealer dominance of the Board. This has not been corrected.

3. The Board was criticized for its mode of functioning. There is no element of formal planning. It puts a premium on reacting to events. The absence of agenda, background material, and minutes in advance of

meetings, makes it difficult for Board members to utilize their time effectively. There is no clear line of command, which undermines the General Manager's authority. The operation of the Board lacks a professional management approach. This has not been corrected.

4. The Board was criticized because the structure of its Board is in conflict with the structure described in the legislation governing the Board, i.e. some growers are also dealers. This is important because producers continue to feel intimidated in expressing their desires by the presence of dealers. (Nevertheless, producers recently rejected the elimination of dealers from the Board). This has not been corrected.

5. The Board was accused of failing to be effective, or consistent, in administering its powers. Minimum pricing orders, levy collection, adherence to licensing requirements were areas cited. There is no evidence that this situation has changed. The ambiguity in the Board's attitude could be directly related to dealer dominance on the Board. There is no evidence this has been corrected.

In summary, there is no evidence that any effective action has been taken to resolve the problems cited in the evaluation study completed in 1984.

3.3. Evaluation of the P.E.I. Potato Marketing Board

3.3.1. Board Purpose

The Board has no written stated purpose, or objective, except, as expressed verbally by the General Manager, a desire to maximize returns from potato production and marketing. To judge the Board, one must fall back on the purpose defined for the legislation (the Temporary Plan), specifically designed for the creation of the marketing board.

"The purpose of this Plan is to encourage the production and marketing of high quality potatoes; to curtail the spread of development of serious potato disease; to eliminate unethical practises and to prevent unnecessary costs in the marketing of potatoes; to investigate and develop markets for Prince Edward Island Potatoes; and to improve transportation and other marketing facilities".

An examination of this purpose, and the legislation, indicates that the Board has the authorities to pursue the objectives and purposes of the legislation within P.E.I. One may wish to interpret the meanings of many of the words, and attempt to define them in terms of alternative strategies for their achivement, but these are not specified. The mandate is drawn broadly, and continues to be consistent with the needs of the industry. While one might wish for more specificity, and some specific interest in producer incentives, the statement remains a fair basis on which to assess the Board's performance.

3.3.2. Board Effectiveness

3.3.2.1. High quality Potatoes

1. Is the Board encouraging the production and marketing of high quality potatoes?

One can point to the following Board activities in positive response.

- The operation of a producer-owned seed farm which expresses producer priorities in this regard, and seeks better approaches to seed proposition, and variety development.

- The Elite Seed contract program.

- The operation of the Disease Eradication Project with the assistance of the provincial government funding.

- The operation of the Disease Control Project with federal government funding.

- The Advance Payments' program increases producers resources and returns beyond what they otherwise would be, thus encouraging production.

- The transportation number system provides a check on the quality, price, quantity, and destination of products shipped.

- The posting of market prices provides market information, which could increase returns beyond what they otherwise would be in the absence of such information.

- Representations to government regarding the inspection services, their maintenance, cost, and improvement.

2. Could the Board have done more?

The obvious answer is yes, but with what resources, and at what cost?

- Premium standards could have been established and policed. Complaints could be sought and followed up, e.g. mud in bags in Ontario, blemished potatoes in Nova Scotia, premium packs for certain markets, refusal to allow shipping of those with complaint history until quality checked, etc.

- For these actions, there was obviously insufficient support, or the Board did not have the necessary human resources available, or these objectives did not have the priority to ensure development of an industry commitment, or perhaps it is a matter related to the absence of a marketing sense of urgency, and the kind vision of market success associated with professional competence in marketing.

- Increased variety development and promotion:
  e.g.
    - Yellow Flesh/Red Skin/Small potatoes
    - Market specific packaging
    - Product identity development.

Similar reasons to the above apply. Many think the Board is spending too much already. Others think the Board should be much more aggressive in variety development and promotion, generally, and for processing. There are a great number of issues which could have been pursued, which have not generated support. If they have not generated sufficient support with a dealer-dominated Board, for whom such matters should have priority, then more action is unlikely without more direct incentives, perhaps from government.

3.3.2.2. Potato Disease

1. Does the Board work to curtail the spread or development of serious potato disease.

The following Board activities point to a positive response:

- The Seed Farm Propogation program
- The Elite Seed Contract program
- The Provincial Disease Eradication program
- The Federal Disease Control program
- The Florida Test program
- Committee on Chemicals and Pesticides.

2. Could the Board have done more?

Some producers expressed the feeling that controls are not rigorous enough. Obviously more rigor has not been supported. There are other diseases which are not being controlled, and bacterial ring rot remains a problem. There is a role, here, for government as well, which has not been fulfilled.

3.3.2.3. Unethical Practises

1. Does the Board act to eliminate unethical practises?

   - The Board did act to institute transportation numbers, as a means of preventing sales on consignment. This is not now considered a problem with the shift to road from rail transport, and the rapidity of movement. However, it did act. This would protect local dealers as well. While there is some doubt as to how effective this measure would be in the face of active dealer opposition, the Board did act.

   - The Board instituted minimum prices, in an attempt to eliminate what was considered to be unethical undercutting of prices. The Board did not succeed. It is not alone in this from the evidence available from other Boards. It was undermined in its efforts by some producers and dealers, and probably by opposition expressed through political pressure. There was some questions as to whether the Board had the legal authority. This cannot be verified, because the issue was not pursued and tested in the courts. The Board may not have pursued the authorities it did have to gather information, and lay charges. The actual minimum price program may not have been handled with sufficient nimbleness, and market knowledge, given the high degree of competition in the market at that time, and the limited market power available to the Board.

Nevertheless, the attempt was made. It could be argued that efforts to exert market control in the interests of producers are impossible to realize with the current structure of the Board, and the marketplace.

- The Board succeeded in achieving provincial support for the Disease Eradication program. This facilitates the elimination of diseased planting and could prevent attempts to market diseased potatoes which might otherwise enter the market.

- Price posting attempts to add to producer information to discourage unjustified efforts to depress prices. The presence of pricing with all its flaws is probably better than no price information.

2. Could the Board have done more?

- It appears to the analyst that the Board retreated from pursuing minimum prices as vigorously as it might have, based on the lack of political support and dealer pressure. It may also be that it was not prepared to consider pursuing what was opposed by a vociferous minority, nor prepared to pay for the necessary marketing skill to make the effort successful. No commitment from growers and dealers was sought. It would be difficult to succeed without a pooling mechanism. It was not made clear that the strategy could involve a trade-off of volume for price which could be profitable for producers, but often need pooling to generate the producer's support to succeed. There could be little benefit for dealers, and in fact there would be a likely loss. The voluntary marketing approach used by Quebec producers was an alternative. This approach, would be unthinkable for a dealer-dominated Board.

- The presence of regulators, and those to be regulated within the same body, producers and dealers, combined with the market power of dealers real and/or perceived, makes the market regulatory function of the Board difficult, if not impossible. The breach of the letter and the spirit of the legislation with regard to producer control could lie at the heart of producers' difficulty in pursuing their specific interests. (The current producers' chairman, with his interest in a major dealer operation, may be in a conflict of interest position, given the firm's submission to the N.F.P.M.C. which was essentially negative, and the positive stand taken by the Producers' Association.)

Strong efforts appear to be directed to ensuring growers carry out their responsibilities, in disease eradication, seed stock production, advance payments. The whole grading apparatus is in place to ensure the producer will be penalized for any misdeeds. The rising per cent of culls is evidence of that. However, there is no procedure available action to automatically verify market claims which may occur (which can discourage this practise). There is no arrangement for independently monitoring market prices, no specific action has been taken to campaign for higher bonds for dealers who have gone bankrupt. There is the allegation that dealer licenses are poorly policed, and levy collections unsatisfactorily handled. There is no verification of processing grading, etc.. Dealers' activity is supported, but the Spatial Planning Report indicates the Producers Association had difficulty receiving information.

The Board does not enthusiastically support the Producers Association, which should be its political arm. Instead there is feuding. There is no formal information/communication program through the Association beyond annual meetings. A producer board member did not feel it was his job to organize producer information meetings (because he was reportedly fearful of the consequences for himself in relation to dealers). The unilateral determination of grades by processors without monitoring by independant Board representatives leaves open the possibility of discrimination, or self-serving grading based on market conditions.

Forward contracting has fallen into disrepute, because producers cannot count on dealers living up to their contracts. There is no evidence the Board attempted to deal with this problem.

The entire situation lends itself to the interpretation that the dealers control the Board.

3.3.2.4. Improved Transportation

1. Does the Board prevent unnecessary costs in the marketing of potatoes?

   - The Board does campaign to minimize increases in transportation costs.

- The Board was instrumental in establishing Island loading docks.

- The Board has fought federal government cost recovery efforts

2. Has the Board done enough?

   - The question remains as to what are unnecessary costs. The process of washing potatoes and shipping in polybags has added to marketing costs in handling and packaging. So has the rising percentage of culls. Such cost increases can be defended as market requirements. What has the Board done to assist producers in reducing bruising through producer information on harvesting techniques and machinery modification which would directly aid producers? Do Board officers view this as undesirable, adding to available supply (a dealer attitude), although it adds to producer profitability through reduced per unit costs (a producer attitude)? Could the Board have attempted to function as a marketer of last resort, by establishing a marketing arm, so as to have a presence in the market, keeping dealers and wholesalers' honest, and minimizing margins?

3. Did the Board improve transportation and other facilities?

- The Board's transportation activities have been described to be more oriented toward representation than transport improvement, aside from the controversial docking facility. It is apparent from testimony that the Board has performed effectively in its area of activity and the industry has profited. The industry has an effective transportation system serving it, which has benefitted from innovations occurring in the transportation system generally.

4. Could the Board have done more?

   - The Board appears to have stayed clear from what is a key area of dealers' activity. Something more could have been done about developing a rotating pallets or potato bins system.

3.3.2.5. Market Development

1. Does the Board investigate and develop markets for P.E.I. potatoes?

   - The Board participates in Potatoes Canada which seeks to develop Canadian markets for seed.

   - The Board manages the most extensive promotional program for potatoes of any province in Canada.

   - The Board participates in the National Potato Promotion.

   - The Board carried on promotional activities for visiting delegations examining potato supply.

- The Board participates in trade shows and promotional activities with wholesalers and retailers.

2. Could the Board have done more?

- Obviously with greater priority and more money more could have been done. Nevertheless, the brand identity of P.E.I. potatoes has been well and successfully established in the face of a myriad of trade barriers.

- The Board could have been more aggressive in raising funds for promotion from dealers, as in the U.S. They might have more strongly supported Potatoes Canada, and dealer support of that body.

- The Board could have pursued variety development more vigorously.

- Could premium quality branding been developed? Continued P.E.I. advance in the face of competitors catch-up is necessary.

3.3.2.6. Summary of Board Effectiveness

If one examines the sum total of its activities relative to legislative objectives, the Board earns a medium or better mark for effectiveness. The stature of the P.E.I. industry in Canada attests in no small measure to the accomplishments of the Board. The existing structure of the Board has ensured an orientation to activity which benefits the total industry.

More might have been done to pursue narrower producer interests, and more directly improved producer returns at the margin, particularly for smaller producers who are so numerous and lack bargaining power. The Board has been effective in advancing industry interests on a provincial and national basis. This would benefit producers as well. It has failed to effectively pursue more specific producer interests which are a part of its unspecified mandate. One clear flaw is the absence of any substantial effort, or program, to generate broad producer support for the Board's activities, or specific programs aside from the advance payment program and pricing information, aimed at reducing producer costs or increasing producer revenues.

3.3.3. Board Efficiency

3.3.3.1. Cost of operations

The efficiency of the Board can be measured in a number of ways. What is the Board's output per dollar of expenditure compared with other institutions of a similar character? Does it arrive at the achievement of its objectives in good order, and in reasonable time? Is there an obvious waste or misallocation of resources, both human and material?

Below is a thumbnail sketch of some Boards in Canada.

Table 17.

COMPARATIVE DATA ON VARIOUS PROVINCIAL POTATO BOARDS

	P.E.I	NEW BRUNSWICK	QUEBEC	ONTARIO	MANITOBA
No of producers	650(685)	550-600	1000	487	150
Acreage '000 acres	70	51	49	32	43
Production '000 cwt.	17.85	11.18	9.26	7.36	7.79
Board Budget $ 000	1053	400	600	500	1000[1]
Staff Number	14[2]	7	4(+5)[3]	5+1	7[7]
Levy	7c/cwt.[4]	5c/cwt.	$42/ha[3]	8c/cwt.[5]	n.a.
Cost/acre $	15.04	7.84	12.24	15.62	23.26
Cost/producer $	1620	696	600	1027	6666
Farm value/ acre[6]					
1984	997.57	965.46	927.45	1175.68	786.00
1985	582.89	702.92	743.03	1074.13	*88.15

[1] Budget includes packing operation but not packing staff.

[2] Includes seed farm, with a net cost of $325,000 and 6 staff which no other Board has. Includes $128,000 in grants for a net figure of $625,000. On this basis, the P.E.I. figures are $962/producer and $8.93 per acre.

[3] Staff for only producer federation. Levy cost equals 10c/cwt., based on 1986 yield. Growers also must buy shares at $10/ha and 10c./cwt. levy (total 15c/cwt.) to ship through Pomexpan. Pomexpan has a staff of 5.

[4] Plus 3c/cwt. dealer levy.

[5] 4 c/cwt. for processing potatoes.

[6] Derived from potato acreage yield, production, and farm value, Potato Market Review, 1985-86, Crop Development Division, Horticulture Section, Agric. Can. p. 9, ISSN 00833-1324

[7] Excludes packaging.

The data show that the Board, while much more costly than in New Brunswick, the Board most comparable, shows a cost comparable on a per acre basis with other provinces. If one excludes the Seed Farm and grants, the comparable P.E.I. cost descends to $8.93/acre and $964 per producer. If one compares the situation of the P.E.I. industry with that in New Brunswick, there is an indication of value received for the producers' expenditure. However, even after taking account of the Seed Farm, the cost is still 50% higher on a producer basis. With the bulk of N.B. potatoes marketed locally to the processor, costs would tend to be lower. Levies are lower on processing potatoes. Comparing the two provinces on an acreage basis, is more equitable, and shows only one dollar/acre difference, after accounting for the Seed Farm.

By excluding Pomexpan, the Quebec cost excludes some costs which would otherwise be borne by the Growers Federation. Quebec, Ontario and Manitoba are not strictly comparable, because the provincial potato institutions are in direct contact with their major markets, which should lead to lower costs. The Manitoba Board also performs the marketing/packaging task.

In the final analysis, the Board operations are more costly, compared with those in New Brunswick, with some evident value received for the difference in cost. The question remains why the Board cannot run the experimental farm on a full-cost recovery basis. As indicated earlier, it is obvious, as well, that competitiveness and equity demand a higher government participation in the cost of this venture.

Even excluding the Seed Farm, the P.E.I. Board requires more staff than any other board. The stance which the Board takes of defending the industry on national basis when necessary, i.e. cost recovery, diversion, U.S. countervail hearings, transportation questions, seed promotion, etc. may account for some higher cost. It appears evident that the close involvement of the Board of Directors has prevented the burden on the Board staff from being even greater than it might have been.

The down side is the greater likelihood of conflict of interest in board operations, when Board operations are not handled by arms-length technical people. This has been voiced regarding sales promotion and advance payment activities. The organization structure, the absence of professional management approaches, the lack of planning and management control on the part of the partially absent Board, or the Chairman, who is the effective Manager, is costly. The current Manager is effectively an Advisor to the Board who has some responsibility for implementation. The routine work of the Board is carried on in an essentially unsupervised way, except for a general overview. The Manager initiates in those areas of his long experience by making recommendations to the Board. This helps explain the reactive nature of the Board, the absence of planning, and the lack of commitment to producer support and education.

3.3.3.2. Efficiency of Board organization and operations

The Board organization chart indicates an allocation of tasks to specific individuals, through a General Manager answering to the Board of Directors. As mentioned, the General Manager role is actually more advisory than the chart indicates,with some implementation responsibility. In practise, the chain of command is multiple from Board members to staff, with the General Manager having no ultimate operating authority. The number of subordinates would stress the capacity for span of command, if it existed. The organization of the Board must lead to operating inefficiency.

3.3.3.2.1. Structure and planning

There is significant evidence of inefficiency in in the way the Board organized to carry out its work, which must increase the workload of senior staff. There are only chiefs, and no indians. There is no annual workplan (objectives) to be prepared by senior managers. There is no budget review process, involving subordinate managers in choosing priorities and finding ways to control costs (the Elite Seed Farm is an exception). There are no job descriptions to maximize work delegation. There is no job evaluation tieing salary to objectives achievement, There are no management team meetings to share responsibility, to maximize involvement and commitment, and to provide team support for organization objectives. There is little opportunity for operating inputs to management. No clear line of command blocks delegation of responsibility, and leads to poor management of the Boards time. All these things point to inefficiency in the operation of the organization.

All this may be a result of the inherent schizophrenia of the organization, purporting to be a Producer Board, while pursuing a dealer agenda. This would encourage unclear goals, and keeping the staff in the dark. One other price for this approach is reduced efficiency. This would also explain the absence of any effort to generate producer support for Board operations.

It would be difficult for this Board to react to broad gradual changes in the industry and the marketplace, which would require general producer support. There is no traditional mechanisms in place to internally canvass producer support, or attempt to inform, offer options, or form opinion. It would be quick to react to sudden change. Since there is no perceived need for producer consultation. With no involvement of the operating management team, and no upward planning input except on a one-on-one basis, there is no sharing of responsibility and tasks, and less possibility of creative problem-solving and commitment to solutions arrived at. The Chairman and some members of the Board, as well as the nominal Manager, must carry a heavier load as a consequence, to maintain minimum operation. Some of these responsibilities and tasks could more properly be shared with staff. This burden prevents more time being spent by the Board on planning, in organized planned meetings.

3.3.3.2.2. Levies and costs

The dealer and grower levy, taking into account a 5 cents levy on processing potatoes (15%) and 20% culls), comes to an average of 6.0c/cwt. In 1984, actual collections were an average of 4.25 cents/cwt. on total production. This could indicate a significant lack of effectiveness and efficiency in Board operation in the important area of levy collection.

On the cost side, current Managers' salaries are lower than they would be for professional management, which would not tolerate current organization and with whom the Board may feel less comfortable. (They also avoid having to face a professional's inclination to recommend attack on marketing and grower interest issues which have been relegated to a lesser priority owing to the dealer complexion of the Board).

Further, additional work by Board members compensates for some of the inefficiency of current organization and operation. However, although they may happily content themselves with saving money on clerical salaries, and overcome some of the effect of inefficient organization through additional hours, the policy role responsibility is masked and avoided by this busyness. In addition, busy and competent producers would avoid taking on the onerous time commitments that Board membership and inefficient organization dictate. Further, this reliance on dealer-oriented Board member discourages the development of genuine leadership, and leadership and management competence, among "bona fide" producers. This perpetuates a dependance on dealers, and a priority for their interests in Board and industry management. These are hidden costs of inefficient Board operations.

On balance, the Board gets mixed marks on efficiency, medium or less, acceptable only owing to the heavy Board input, with negative, as well as positive, implications. This is unlikely to be sustainable in the long run. There is no substitute for more professional team management at the operating level to ensure efficient disinterested operation of the Board.

3.3.3.3. Impact of Board operations.

Objective measures of the industry include acreage, yields, sales and income results. There is obvious indication of industry growth and development. The importance of the P.E.I. potato industry in the national context has grown, both from a physical and qualitative point of view. Nevertheless, the industry in the province remains small in scale on a unit basis. Potatoes appear to be a cash crop hedge pursued in conjunction with other farm activities in the hope of being present for the occasional highly profitable year, when weather conditions result in market shortages.

No direct income data are available, but indications (C.O.P. studies) are that the industry is not usually profitable on the scale it is being pursued if normal charges for the use of resources apply. Even on a cash cost basis, the situation on an average basis is marginal.

Some dealer-producers would like to see smaller operators disappear. The Board has not engaged in any activities which might directly assist these producers to become more effective, as producers i.e. focusing on cull reduction extension work. This could have a substantial impact on returns. Transportation efforts, the advance payment work, and cost recovery negotiation would have a positive general effect in this direction, but it is impossible to know if they have been sufficient to offset the Board cost of $15.00/acre. If yields are 250 cwt./acre at 10 c/cwt. (producer plus dealer levy), the cost is closer to $25.00/ acre if the monies are actually collected, and $20.00/acre ($10.00/acre for processing) if one assumes 20% culls.

The data in Table 11., showing farm value per acre, are a rough measure of gross income from potatoes. They illustrate how vulnerable P.E.I. is to poor market conditions, if we compare 1984 and 1985. Higher yield per acre has, except in Manitoba, been insufficient to offset the economic advantages associated with proximity to market, e.g. higher prices. Lower transport cost, etc... P.E.I. producers need lower production costs per acre to be as profitable as producers in other provinces. This has not been a priority area of Board activity. Direct attention to higher producer returns was abandoned with the minimum price effort. With the large premiums available in some potato markets for P.E.I. potatoes, this must be difficult for producers to accept and understand.

3.4. SYSTEM EVALUATION

3.4.1. Theoretical Elements

Economists have a very specific vision of the theoretical or "perfect" market which they use as mirror against which to compare the chaotic reality of the real world. It has the following elements:

1. There are many buyers and sellers who individually have no direct effect (atomistic competition) on the determination of price.

2. All participants in the market are fully informed (perfect information).

3. There are no impediments of any kind to supply and demand in the market for a uniform, identical, product (perfect mobility).

4. The price is a value (equilibrium price) determined by the offer (supply) equal to the minimum that supplies are willing to accept for their product equal to the maximum that buyers are willing to pay for the product they desire (demand) at a given instant in time.

It is clear that all these specifications are unlikely to be precisely met in the real world. Its closest approximations are often seen in the marketplaces where perishable products are bought and sold. This concept of the market provide little room for moral judgements, or ideas about fairness or equity. This latter harks back to a religious view of the universe. The economic view speaks to situations where people accept the absolute minimums for their perceived value of the product, and people pay the absolute maximum in relation to their perceived need for product.

Every marketing system alternative brings with it a variety of trade-offs, farmer benefits versus consumer welfare, economies of scale and capital, versus employment, external shipment versus domestic needs and import substitution, and government versus private enterprise, etc. In our relatively rich society a "laissez faire" economic system has responded to these questions in the direction of determination by a generally uninhibited market response.

There are, nevertheless, socio-economic issues which arise under the general heading of equity. These relate to grower and intermediaries driven out of business, e.g. assemblers by increased market efficiency, or market-determined, or even administratively-determined, prices above the reach of the poor, or below the survival level of many small farm operators. Efficient marketing systems can easily be pronounced guilty of inequity when these criteria are used. The Marketing Board argument used by social action groups and producers in their submissions measure market performance on economic grounds using these different criteria.

3.4.2. Empirical Evidence

A micro/macro analysis examines how individual firms, or a whole industry segment, is performing. We have already examined the producer segment. The examination has indicated that median and relatively sizable scale operations may be having difficulty achieving profitability. Nevertheless, there is growth, and the largest segment, responsible for a significant portion of production may be profitable, perhaps in combination with dealer operations.

Taking the industry as a whole, there is ample evidence that there is competition which shaves intermediary margins, even eliminating some assemblers, small producer-dealers and dealers, as well as brokers, through economic pressure as the industry concentrates. Concentration, which increases efficiency, can bring its own problems if there is no offsetting concentration throughout the industry. Large dealers face even larger manufacturers and retailers. But in P.E.I. and New Brunswick, these dealers face mainly unorganized producers. This imbalance can make it unlikely that "equitable" market arrangements emerge. The cost at which services are provided is an outcome of the degree of balance between the parties in the system.

While the system appears reasonably effective in moving large quantities of product long distances in a timely way without undue loss and waste, it benefits all parties, not necessarily equally. Another common measure of performance is the producers' share of consumer expenditure. There is evidence that the P.E.I. producers share of the consumer dollar is less than it is for many other producers in other parts of the market. This again may be a function of his distance from market, and his reliance, primarily on the fresh market. In this respect, the P.E.I,. position is similar to that in Maine. Heavy reliance on the process market stabilizes producer returns in many other producing areas. P.E.I. producers do not have this access.

Table 18.

P.E.I. PRODUCER SHARES OF RETAIL PRICES
BY SELECTED MONTHS, AND MARKETS, 1985-86
- For 10 lb. bags -

Month	Bulk Delivered FOB Shipping Point	Average Retail Price		Producer Share of Retail Price	
		Toronto	Montreal	Toronto	Montreal
	- cents/lb -			- % -	
OCTOBER	3.4	13.1	10.4	26.0	32.7
JANUARY	2.7	16.7	12.1	16.2	22.3
APRIL	3.1	15.5	12.6	20.1	24.6
JULY	5.4	35.4	21.1	15.2	25.6

Sources: Potato Market Review, Agriculture Canada, 1985-86
Retail Prices by City, Statistics Canada, 1985-86
Quarterly, Surveyed the first week of the month.

The great differences between P.E.I. producer results (and those in New Brunswick as well) illustrate the disadvantaged position of Maritime suppliers who are far from market. The higher shares early on probably reflect retail specialling during the harvest season. P.E.I. shares are low even relative to New Brunswick and Quebec, in spite of premiums. Distance is a factor. To cancel out this distance factor for P.E.I. potatoes, would require adjusting for the extra transport cost by at least $1.00 per cwt. Allowing for this differential would raise P.E.I. producer shares during the four months shown to 33%, 21%, 26%, and 13%, respectively. This would make share results more comparable with those in Quebec (and Ontario? or New Brunswick?). However, they remain far different from those in the West. Producer shares in the East, during the latter part of the year, are likely to be only relevant for P.E.I. potatoes, as Quebec and Ontario products are essentially unavailable during January, and thereafter. The marketing of P.E.I. potatoes, as currently practised, would have a market effect on producer shares in all Eastern provinces.

Table 19.

COMPARISON OF PRODUCER SHARES OF RETAIL PRICES, BY SELECTED PROVINCES, QUARTERLY, 1985-86

Month	Producing Province Producer Price* P.E.I.	City Average Retail** Toronto	Producer Share	Producing Province Producer Price* New Brunswick	City Average Retail** Montreal	Producer Share
	-cents per pound-		-%-	-cents per pound-		-%-
OCTOBER	3.34	13.1	25.5	3.03	10.4	31.7
JANUARY	2.56	16.7	15.3	2.52	12.1	20.8
APRIL	3.06	15.5	19.7	1.84	12.6	14.4
JULY	3.46	35.4	9.8	2.52	21.1	11.9
	Quebec	Montreal		Manitoba	Winnipeg	
OCTOBER	3.24	10.4	31.2	8.30	14.5	57.2
JANUARY	3.24	12.1	26.8	8.00	15.2	52.6
APRIL	3.28	12.6	26.0	7.88	15.0	52.5
JULY	4.47	21.1	21.2	7.70	15.1	51.0
	Alberta	Edmonton		B.C.	Vancouver	
OCTOBER	6.42	19.3	33.3	8.62	18.60	46.3
JANUARY	9.52	21.2	44.9	12.62	23.20	54.3
APRIL	9.12	24.2	37.7	11.62	21.40	59.3
JULY	10.12	33.4	30.3	11.62	29.20	39.8

* Based on a monthly simple average of weekly observations of F.O.B. shipping point prices in 50 lb. bags. Cursory analysis indicates the 10 pound bag prices are .50 to .75 cents per pound higher in the East. The producer shares would be understated as a consequence. These prices have therefore been adjusted upward by .625.

Source: Potato Market Review, Agriculture Canada, 1985-86, June prices are used for July comparison. No market figures are available for Ontario, p.p. 35, 38, 45.

**Based on retail prices in 10 lb. bags, surveyed quarterly during the first week of the month.

Source: Statistics Canada. The sources of the potatoes is not specified.

3.4.3. Defining the Reality

The P.E.I. potato producer faces a complex marketing situation. His market (assuming he has no processing contract) has the following components:

3.4.3.1. Market Elements

1. The home consumption/subsistence market

Some of his product will be allocated to his personal and family consumption. This may include some product selected for seed. It will probably include supplies for table consumption. He may use culls from his farm grading, or that retrieved from the packing shed, to consume, personally and/or to feed his farm animals. This could account for 20-25% of his crop.

2. The local table/seed market

The grower may be able to dispose of some of his product to neighbours, and to local retailers. The market would be small, and the competition from his neighbours and local gardens would keep this price to a minimum.

3. The local potato dealer/exporter

The producer must market into a situation often based on a long historical relationship, as well as current economic conditions. Is he a regular supplier? Or does he sell to different dealers? Has his product been reliable as to quality? Has he required production input advances? What is the current crop/market situation? What is the cash flow/financing situation? What is his standing in the community, his economic/social clout. Most of these elements have little to do with the perfect market.

4. Producer decision-making

Within his personal socio-economic context, the producer must decide whether he should:

a) hold or sell;

b) what is his minimum acceptable price given his circumstances?

c) Who he should sell to for economic/political reasons?

d) Where he can get the maximum price?

e) Where he must sell for other reasons?

The dealer prefers to deal with regular, reliable, suppliers with minimum time/cost/expenditure. He makes himself aware of market prices on a continuing basis, and makes offers which yield him a satisfactory margin given the expense and volume related to the transaction. For those with whom his experience has not been profitable, his margin will be higher. Obviously, his margin will also be affected by the ease with which he is able to fill the order. If the dealer is in the business primarily of marketing his own prouct, he may be more flexible in determining his margin. The dealer who relies on his margin for his livelihood will likely be formal in his business style. The producer must assess all these factors in making a shipping decision.

5. The market potato dealer/broker

The local producer-dealer, his product in hand, in touch with the marketplace, must also consider an array of decisions.

a) He can market to a larger dealer;

b) He can process:
  - shipping count boxes: local/export
  - shipping strippers: local/export
  - packaging for the table market: local/export;

c) He can market to an exporter of seed or table;

d) He can ship to a wholesaler, or broker.

Depending on his business, his supply, and the nature of demand by variety, round or long whites, he will seek to maximize his returns. If he is infrequently in the market, he will use the posted price at the Board as an indicator. If he is continually in the marketplace, he has direct sources of information.

As a dealer, continuous turnover is the secret of profitability. He does not likely entertain a hold, or sell option, unless he is also a grower. He seeks to ship on a volume basis, while achieving a margin which will yield a profit. Some profit is always better than no sale. His major considerations are the reliability of the supplier (quality/timing), and the reliability of the buyer (payment). Margins are too thin to permit significant losses. Transactions must be rapidly completed and disposed of, if profitable volume is to be achieved and operating overhead cost exceeded. Anything which becomes complicated, or time-consuming, is not worth doing. The small producer cannot be profitably handled.

On the other side, wholesalers and brokers face the same pressure. The negotiation process is brief, if it exists at all. Transactions are handled by buyer staff with little flexibility in their price arrangement. If the supplier is not reliable, he receives a discounted price, if any. If he insists on negotiating higher prices, he will be left with marginal wholesalers or brokers, who may or may not pay. The individual supplier of small or medium size has little if any bargaining power.

6. The buyer

The retailer will get his price signals once per week from his calls to his wholesaler/broker suppliers. If he is the chain buyer, he will seek to find an edge in the price among his suppliers, shifting shares of his purchases based on any small price advantage which may appear, and bringing others into line. He will place his orders once per week about 10 days (Thursdays) ahead. He will seek to buy major supplies direct from the distant producing area, if possible, to minimize cost, and top up purchases to meet his requirements from local wholesalers. He will always seek to maintain some local suppliers, and divide his business as a hedge, even at a slight premium. Continuity and reliability of supply and the assurance that his price is no higher than his competitors are the primary rules.

The wholesaler/broker is vulnerable to the buying power of the chain. While the chain will extract the best terms, smaller buyers are more expensive to service, even if more lucrative. And then there is always the risk on non-payment. The chain will pay on the last permissible day, and still seek early payment terms, but they will pay. Transactions are quick, large and almost automatic. They provide the turnover which is the basis for the wholesaler or broker's profitability. It would be dangerous to refuse their requests even if somewhat unreasonable. The chain buyer will demand price concessions for a volume sale. The broker, or wholesaler, must seek to recover part of all of this concession from suppliers. Large competitors will receive similar concessions on a rotational basis.

The seed market, although offering higher prices, is more risky and politicised. The count box market is more service-oriented. The process market provides a reliable price, but requires close attention to processor needs, and is vulnerable to market conditions at delivery time.

3.4.3.2. Competitive suppliers

1. Table potatoes

In Canada, P.E.I. faces competition from local production which takes a regional seasonal form. Ontario product is early in the market after harvest, displacing early American (Florida/ Alabama/Virginia/North Carolina) product selling at three times the price. Ontario product is available from July to December. Minimum prices are established by the Board during July. P.E.I. product enters the market in September. P.E.I. completely dominates the market beginning in January and until the end of June. During the Spring months, early U.S. potatoes enter the market in small quantities, but by March constitute significant supplies. They are factor until June (Florida). California product (Superiors) arrives in mid-May, with product from Alabama, and Virginia and North Caroline following. Prices being at four times the P.E.I. price in March, and can be still double the higher P.E.I. price in June. The P.E.I. share has been estimated as being in excess of 50% of the market.

In Quebec, local production is favoured, particularly during the harvest period. However, the same pattern holds. While there is some New Brunswick product, it is not saleable as long as Quebec product remains to be marketed. The Quebec producer marketing institution is engaged in active marketing and advertising, which has impacted the market for P.E.I. product, particularly when coordinated with retail promotion. The P.E.I. share of the market has been variously estimated between 17-23%, (compared with 60% for Quebec product).

Toward the U.S., P.E.I. has a stronger franchise in Boston than elsewhere. The market recognizes the unique P.E.I. product, and consumers pay a premium. The count pack business (which doubles the normal price for potatoes uniformly-sized by count per 50 lb. carton), has yielded an additional market niche through which P.E.I. potatoes have competed successfully with Idaho product on the Eastern seabord. Some competition comes from U.S. processors, who operate a count pack operation concurrently with the processing activity, but these exports have shown rapid growth. Depressed price conditions affect the potential of these markets, and in 1985, led to significant competition from New Brunswick sources.

The overseas export market, with attendant risks, often depends on the availability of hard currency in the Caribbean and South American markets. Product from Europe can potentially displace Canadian product. In these major markets, competitive factors associated with consumer preference are also a factor. The U.S. and overseas table markets are only marginally amenable to influence from Canadian sources.

2. Seed potatoes

The franchise enjoyed by P.E.I. potatoes has been seriously eroded by non-market factors, both among traditional customers in Europe and Africa (E.E.C.), as well as in the U.S. and Canada. Competitive factors like the preference for small whole seed potatoes, the availability of controlled varieties, and offer price, are also important. The Dutch product is the most serious competitor in Europe and Africa. Highly complex regulations dictate the acceptability of seed stock in many countries. In some of them, officials can be influenced by self-interest as competitors compete for officials' support. Canadian, and particularly P.E.I., product remains a factor in the world seed potato market, but this market is amenable to only small influence from Canadian sources.

3. Processing potatoes

The bargaining power of processors, and their capacity to offer a reliable market outlet for limited amounts of product, has permitted them to successfully dictate purchase conditions in the face of volatile table and seed markets. The job opportunities offered by such facilities has generated political support from government which has discouraged militant producer efforts to improve their bargaining position. The multinational nature of processing operations by McCain's, coupled with the export sales potential of the french fry industry, has forced producers to accept prices based on the total North American market situation, rather than their ability to withhold product from dependant plants. As in the export market for seed and table potatoes, these are factors which producers will always have to take into account no matter how the industry is organized.

In the current circumstances, producers across the country, but particularly in Eastern Canada, have surrendered market and bargaining power to processors, which they might otherwise have had in the absence of an international market situation. (See producer price differentials in Table 19.) Without this, P.E.I. producers could have played off demand from McCain in negotiating better terms from Cavendish, for whom there is no competitive supplier.

This factor, and the uncertainty in the table and seed market, have kept producers on the defensive.

3.4.4. The Question of Equity

The question of equity is not highly relevant to the cut and thrust of the open market system. This system dictates prices for product which are the lowest suppliers will sell for, and the highest buyers will pay. This equilibrium price has no necessary relationship with the suppliers' production cost. The supplier may seek to, at least, recover his costs, and theoretially, this may dictate sales at the level of the production cost of the most efficient producer. However, it may also dictate a return which could be negative, if there is a cost to the producer for dump disposal. For the buyer, it may means a price which permits a profit over total costs, but it may also mean any price which permits any margin above the direct costs of handling and disposing of the product.

The concept of equity speaks to ensuring producers a price which permits a sufficient margin above all costs, so that he can stay in business and provide the necessities and basic amenities for his family. For the buyer, it may be taken to mean a price offer to producers, and a resale price which provides the buyer, given the volume handled, with similar rewards to himself and his dependants. These standards have little to do with either, the economic model, or the real world.

The economic model says that producers will continue to offer product, until the marginal cost (that of producing the last unit) equals the marginal revenue, i.e. the sale price of the last unit sold. In the long run, this cannot be less than average cost (including all overhead costs), if the producer is to stay in business. This same idea applies to the intermediary. In the real world, particularly, with perishable products produced on a once-a-year basis, the margin may be a price including the cost of harvest and transport to the seller. Once harvested, it may be anything above the cost of transport to the seller. For the buyer, it may have to be sufficient net revenue to exceed alternative demands, or profit opportunities which could flow from the buyers' attention, time, and access to his trading facilities, taking into account the risks associated with the transactions.

There is an obvious imbalance between the market power in the hands of the relatively isolated small scale seller and the buyers most of them deal with. Smaller scale buyers in P.E.I., particularly those who supply a portion of their own supplies, tend not to use all the market power they possess, seeking marginal gains. Those acting primarily as intermediaries are more likely to seek to maximize the gains. As shown by their volumes, these latter come to dominate the market.

In this context, the search for equity lies in the direction of effort to improve the balance of bargaining power between sellers and buyers. The traditional measures of combining through selling cooperatives or companies, e.g. Pomexpan, or through the use of marketing orders, one-desk selling, minimum pricing, or even supply management, move in this direction.

3.3.5. System Performance

P.E.I. growers face monopolistic conditions in their local market, through powerful processing contractors, and a few dominant dealers and exporters. In their major markets, they face political and institutional discrimination in Quebec and Ontario, and dominant buyers in both these markets. Organized producer efforts to compete with P.E.I. producers exist in both Quebec and Ontario, where the advantage of direct legislative market control rests in the competitors' hands.

P.E.I. growers face non-tariff barriers in major European markets for seed potatoes, and a shrinking market, in the face of a powerful Dutch competitor with scale and strong producer organization. A breakdown in international financial arrangements threatens the Caribbean and South American markets. The major U.S. market, where P.E.I producers and dealers have been very successful, is increasing vulnerable to trade restriction, regardless of the Canadian regime.

The question of unethical practise, as characterised by unjustified damage claims, pay-offs to buyers, bribed inspection personnel, no longer seems to be the factor of concern it was some years ago. Nevertheless, producers and local dealers still do not feel that forward contracting constitutes a viable option. They believe that any market advantages which might appear would be eroded by false claims against which potato growers and dealers could not defend themselves. This applies, in the perception of some, to Cavendish Farms as well. The current unilateral grading of processing potatoes is also a matter of concern.

The perception by some (including a Producer Board member) that producers cannot openly unite to pursue their common interests without suffering economic consequence relative to market access, is an unacceptable blemish on the systems' performance. The inability, or disinterest, of the Producers' Board regarding the protection of growers from such intimidation, is a further expression of the system's failure in this regard.

In Table 20 below, is a comparison of producer shipping point prices in P.E.I., and wholesale prices for major markets. The prices are not strictly comparable. However, with little variation in wholesale quotations, they do illustrate how producer and market prices can be substantially divergent. They imply that growers are not getting all they should get out of the marketplace. Note particularly how producers' prices do not materially reflect gains in market prices, until very late in the season. Price spreads increased from about $1.00 and $1.50 at Montreal and Toronto respectively, to over $2.00 per unit in these centres. The Toronto market is much more responsive to changes in P.E.I. producer prices. While these wholesale prices do not necessarily reflect the prices at which the bulk of private treaty product from P.E.I. moved to market, significantly larger intermediary gains in Montreal and Ottawa are indicated during a period of great anxiety and distress for producers. The existing market sentiment, and the perception of distress market conditions, persuaded producers to sell at lower prices than the market in retrospect appeared to justify in some parts of the season. Such occurences encourage producer disillusionment with the market system. The wide variance in producer shares of retail prices, even given varying distance from markets, is a further indication of market inefficiency consequent on differences in producer bargaining power. It is interesting that Montreal differential can be higher than in Toronto, even with broker representation and lower transport cost.

Table 20.

GROWER BULK PRICE/CWT. AT SHIPPING POINT AND WHOLESALE PRICE QUOTATIONS/MARGINS AT MONTH-END, PER 50-LB. BAGS OF P.E.I. POTATOES, IN SELECTED CITIES*

1985-86

Month	GROWER PRICE MONTHLY AVERAGE SHIPPING POINT	MONTH-END WHOLESALE PRICE/MARGIN				
		MONTREAl		OTTAWA	TORONTO	
	- $ / 50 lb bag -					
			Margin			Margin
SEPTEMBER		3.00		--	3.38	
OCTOBER	1.86	2.95	+1.09	3.25	3.38	+1.51
NOVEMBER	1.68	3.13	+1.45	3.18	3.38	+1.70
DECEMBER	1.52	3.13	+1.61	3.43	3.38	+1.86
JANUARY	1.47	2.80	+1.33	3.43	3.13	+1.66
FEBRUARY	1.28	2.88	+1.60	2.98	2.88	+1.60
MARCH	1.37	2.88	+1.51	3.23	3.13	+1.56
APRIL	1.72	4.05	+2.28	3.40	3.38	+1.66
MAY	1.80	4.13	+2.33	4.30	3.13	+1.33
JUNE	1.93	4.00	+2.07	4.10	3.13	+1.20
JULY	2.78	5.33	+2.55	--	4.75	+1.97
AVERAGE		3.48		3.48	3.36	

Source: P.E.I. Statistical Service, P.E.I. Department of Agriculture, Simple Averages.

The current monopolistic market environment for P.E.I. growers is unlikely to be altered without the existence of a producer-oriented National Board. The Canadian context is not likely to be altered significantly in the direction of more balance in market power, without legally sanctioned market intervention. Externally (beyond Canadian borders), growers have only limited opportunity to effect change in the terms of trade without a more active national trading body.

While P.E.I. production has continued to grow, perhaps in the expectation of a supply management regime, perhaps owing to the absence of more interesting production alternatives, returns from the market appear to continue to be below cost of production for most P.E.I. operators engaged solely in production. In spite of higher yields, the system offers P.E.I. growers below per-acre revenues in Ontario and Quebec, and even New Brunswick. Taking into account the latter's substantial local access to processing, P.E.I. is uniquely the supplier of products to distant markets, and receives, with the current system, a residual price which appears to be below the P.E.I. industry's average total cost, and perhaps below its average marginal cost.

The industry's trend is for growth in both production and returns. This flies in the face of these conclusions. J.D. Forbes has maintained in his submission paper to the National Farm Products Marketing Council hearings that real returns, in Canada, have increased almost 4 times per land unit since 1966, based on rising prices and productivity. We can only conclude from the income assurance program results in Quebec, and the scanty cost of production data in P.E.I. that costs have risen even faster. We know producer numbers have fallen. It may be that a segment of the producing group still finds production profitable and that expansion is taking place within this group.

3.3.6. Industry Concentration

The 1981 Canada census results shown in Table 15. indicated 88.5% of farms have less than 100 acres under production, and produced 24.1% of production at that time. It may be that for the bulk of current production, current returns from the system remain satisfactory. That does not appear to be the case for most of the producers involved in the system. The 1986 census will probably show even greater concentration.

Table 21.

DISTRIBUTION OF POTATO FARMS BY NUMBER AND SIZE, CANADA, 1981

Acreage Planted	Number of Farms	Cumulative Percentage of Farms	Total Acres	Average Number of Acres	Cumulative Percentage of Total Acreage
1 or less	2,427	100	2,427	1	100
2	701	66	1,402	2	99.1
3-4	675	56.2	2,275	3.4	98.6
5-6	416	46.7	2,201	5.3	97.8
7-8	236	40.9	1,781	7.6	97
9-10	218	37.6	2,146	9.8	96.3
11-12	95	34.5	1,125	11.8	95.5
13-17	223	33.2	3,342	15	95.1
18-32	472	30.1	11,526	24.4	93.9
33-47	273	23.5	10,828	39.7	89.7
48-62	271	19.7	14,796	54.6	85.7
63-77	168	15.9	11,758	70	80.3
78-92	145	13.5	12,240	84.4	75.9
93-127	254	11.5	27,788	109.4	71.5
128-192	228	7.9	35,078	153.9	61.3
193-277	147	4.7	33,125	225.3	48.4
278+	190	2.7	98,890	520.5	36.3
TOTAL	7,139		272,728	38.2	

Source: Statistics Canada, Cat. 96-912, Table 11, p.11-4.

Table 22.

DISTRIBUTION OF POTATO FARMS BY NUMBER AND SIZE, P.E.I., 1981

Acreage Planted	Number of Farms	Cumulative Percentage of Farms	Total Acres	Average Number of Acres	Cumulative Percentage of Total Acreage
1 or less	48	100	48	1	100
2	21	94.3	42	2	99.9
3-4	41	91.7	142	3.5	99.8
5-6	51	86.8	276	5.4	99.6
7-8	32	80.4	240	7.5	99.2
9-10	35	76.5	344	9.8	98.3
11-12	18	72.3	212	11.8	98.3
13-17	47	70.1	709	15.1	98.0
18-32	130	64.4	3,257	25.0	96.8
33-47	79	48.6	3,192	40.4	91.7
48-62	56	39.0	3,078	55.0	86.8
63-77	43	32.2	3,035	70.6	81.9
78-92	30	27.0	2,523	84.1	77.2
93-127	55	23.3	5,988	108.9	73.2
128-192	43	16.6	6,658	154.8	63.8
193-277	40	11.4	9,165	229.1	53.4
278+	54	6.6	24,969	452.4	39.1
TOTAL	823		63,878		

Source: Statistics Canada, Cat. 96-912, Table 11, p. 12-2.

An examination of the situation in P.E.I. shows that only 76% of producers have 100 acres or less, accounting for 22.8% of production. This shows that average scale in P.E.I. is higher than the Canadian average. The level of concentration is less in P.E.I. than the Canadian average. The 23.3% of the farms with acreages averaging over 100 acres hold slightly more of the acreage at 73.2%. But this fraction of the total numbers of operations is twice that of the Canadian average (11.5%) Those holding a viable self-supporting potato operation (200 acres) are still only 11.4% of the P.E.I. operations, but these are more than twice the level in Canada as a whole. Higher average scale in P.E.I. may be of some assistance in improving net returns. It would also place P.E.I. at some relative competitive advantage. This would be more than offset by the costs of distance from market, faced by P.E.I. producers within the current system. Scale increases to date, given the current system, and based on available cost data, have probably not been of sufficient assistance to even larger operators as a group to provide consistent profitability.

4.0. COMPARATIVE CONDITIONS IN SELECTED COMPETITIVE PRODUCTION AREAS

4.1. SITUATION IN CANADIAN PROVINCES AND MARKETS

This material has been partially reviewed in previous sections of this paper. Newfoundland is a net importer with marginal production. It is a significant importer of P.E.I. (over 80% of inward shipments (625,000 cwt. in 1985-1986)) product. Local production has almost disappeared. While Newfoundland favors the plan, they wish a share of national quota not justified by historical experience. Potato wart and Golden Nematode incidence prevent shipment out. Reported per capita production (56.5 kg versus a Canadian average of 27.4 kg fresh in 1982) (and 5.6 kg frozen product versus 1.8 kg for Canada), is very high. The Newfoundland government wishes to negotiate terms of entry in return for joining the plan.

In New Brunswick, producers are organized through a Potato Agency, founded on two regional organizations which have only recently overcome their differences, based in part on linguistic factors. The Agency levies, and carries on, minor price-setting activity (July 10-16 for locally sold potatoes), and disease control activity. It operates an advance payments program. It negotiates with McCain's to determine processing potatoes. Government takes a strong interest in the Board's operations. Aside from grants of various kinds, it assisted the Board in acquiring a competent Manager, by underwriting salary, and guaranteeing a job should employment with the Agency terminate. While not a professional manager, Willem Shrage is instrumental in making the Agency a functioning organization.

About 60% of New Brunswick product goes for seed and processing. Of the remaining 40% of product, about 28% moves outside the province for table and other uses, mainly to the United States.

The province's producers, particularly the Northern francophone group, would like to participate in a national supply management program. They would like, however, to see Manitoba included in the program for fear that processing acreage would be shifted to that province, if this was not the case. Like P.E.I. producers, they would like to be assured that U.S. export markets would not be sacrificed, and acreage would not be shifted to consuming provinces in the future. Producers are very concerned about the attitude of McCain's to the proposed Supply Management Plan. The province has suffered particularly from the impact of Quebec policies in the potato industry. The New Brunswick government is concerned about a national agency impact on processing and exports.

In Nova Scotia, which once planted 60,000 acres of potatoes (1918), acreage is now 4,000, of which 2,500 acres supplies the Hostess Foods Chip plant. Some 65% of this product moves outside the province. The table product aims primarily for the early Summer market (mid-July), and Newfoundland. Some 150 acres are planted to seed, used primarily within the province (aside from small shipments to Bermuda). P.E.I. potatoes dominate the Winter market here. Potato producers were organized into a full-authority marketing board in 1981. The Board engages in promotion. It purchases Pre-Elite seed for local multiplication. It operates an advance payment program. Producers and government support a supply management approach to the potato industry. They are motivated by the desire to maintain and expand their industry, and to stabilize potato prices in their province and in Newfoundland. They would like quota beyond their historical average.

In Quebec, the Quebec Potato Producers Federation was established in 1966. In 1976, the government of the day established an income assurance scheme for potatoes, as for other products, which had the effect of stimulating production. A marketing board was established in 1979. The Board does not regulate seed potatoes and potatoes for processing (chips). Levy power (approximately $9/acre) and promotion activity, was followed by minimum price-setting in 1980-1982. This latter proved unsuccessful. Production licenses were introduced in 1981 for those growing one-half hectare of potatoes or more. The Board appears to have all the authorities necessary to participate in a supply management program within a national plan.

In 1985, POMEXPAN was founded to market Quebec potatoes on a voluntary one-desk basis. The Federation holds 56% of the shares, with the balance of shares held by growers. Producers purchase shares at $15/acre (previously $10), and pay 10 cents/cwt. for potato deliveries to the producers' marketing arm.

Quebec product is marketed directly to wholesalers and retailers, based on the corporation sales instructions. It is estimated that Gosselin markets about 35% of Quebec production, while F. Ward and Sons handles about 20%. A firm called Sauriol markets about 15% of the product. Deliveries to POMEXPAN now constitute about 85% of production for the fresh market. Producers receive payment after 21 days.

Producers are small scale averaging about 49 acres a unit*. The major concentrations of production are around Montreal and Quebec City, with an important producing area located in the Lac St. Jean area. Usage in 1986 was about 8% for seed, 20% for chipping, and the balance for the fresh market. The Federation estimates that it fills 60% of Quebec table market needs, and 92% of chip market needs. The major variety is Superior (60%), with Kennebec supplying the bulk (30%) of the balance. Acreage varies between 15-16% of the Canadian total, with yields 20% (1981-1985) below those in P.E.I. There was only one year (1983) in the last five when Quebec producers did not receive compensation from income assurance.

Data in Table 23 show recent unloads in the Quebec market. On this basis (likely somewhat overstated), the P.E.I. market share approaches 25% vs. the Quebec share of about 60%. The U.S. is supplying under 10%, while N.B. has a small share. This situation is markedly different from the situation in 1980 when both P.E.I. and N.B. each held somewhat more than 20% of this market, and the Quebec share was under 50%.

The current cost of the Income Assurance Program to producers is $6.86/hundred dollars. The government pays $2 for every dollar contribution by producers. The cost of production provides for 70% of an operator labor charge of $12,400, but no return on equity. The fund currently has a $34 million deficit. The premium increased from 29 cents/cwt. /lb to 57 cents/cwt. in 1986. The Quebec government contributes 1.14 cents/cwt.

* Interview with Jacques Mailhot, General Manager of Quebec Producers Potato Federation, March 15th, 1987

Table 23.

ANNUAL RAIL, CAR AND TRUCK UNLOADS OF POTATOES IN QUEBEC CITY AND MONTREAL FROM SELECTED SOURCES, 1985 AND 1986

SOURCE	QUEBEC CITY				MONTREAL				TOTAL			
	1985		1986		1985		1986		1985		1986	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
QUEBEC	98.1	78.1	82.2	76.3	117.6	56.9	131.7	54.3	214.7	64.9	218.9	61.4
P.E.I.	16.6	13.4	17.8	15.6	63.3	30.6	72.9	30.1	79.9	24.1	90.7	25.4
N.B.	3.8	3.0	2.9	2.5	9.2	4.4	8.4	3.5	13.0	3.9	11.3	3.2
U.S.	6.6	5.3	4.8	4.2	16.0	7.7	26.9	11.0	22.6	6.8	31.7	8.9
Other	--	0.2	--	0.4	--	0.4	--	1.0	--	0.3	--	1.1
	124.3	100.0	114.3	100.0	206.6	100.0	242.4	100.0	330.9	100.0	356.7	100.0

Source: Derived from Annual Unload Report Fresh Fruits and Vegetables, Crop Development Division, Horticulture Section, Ag. Canada, ISSN 0516-0526

Growth in the industry and accumulating support program deficits have persuaded the growers to settle for what they have. The change to a liberal government from the P.Q. has helped. Both Quebec producers and government strongly favor a National Supply Management Board.

In Ontario, producers are organized into two Boards which operate jointly, to implement a plan for processing, and one for the fresh market. The Processing Board, owing to the small number (100) of producers and their concentration, were organized first after a 1975 vote for the 1976 crop. The Fresh Plan was implemented in 1979 with 700-800 producers. Total numbers have since fallen to 380.

The Board negotiates the annual processing agreement. All product for processing is available only at the contract price, whether contracted for or not. All processor payments are handled through the Board. Provincial processing grading is jointly paid for by the Board and the processors.

For the fresh market, the Board evolved from a promotional Board toward the establishment of minimum prices. Attempts to implement a voluntary system failed, and to avoid prosecution for restraint of trade, the Board sought pricing powers in 1982-83. Minimum price set are developed according to a schedule from farm bulk to price delivered to retailer. Most product (80%) is shipped bulk to 10-12 packers. Most then goes direct to chains. Brokering in Ontario relates more to U.S. imports.

e.g. Pricing schedule for Ontario minimum prices for Ont. #1 potatoes:
Farm bulk price (base)
Delivered bulk price (base + average freight)
FOB farm pack price (F.O.B. packer) (+ 1 c./lb.)
Delivered wholesalers warehouse (+10%)
Delivered retailers warehouse (+ 1 cent/pound)

Minimum pricing is enforced with the power of records seizure, and potential prosecution. After early opposition, the Board has had general compliance. It is most effective, of course, during the early season when it is essentially the sole supplier facing high priced U.S. imports. The Board has reportedly succeeded in eliminating a price premium for P.E.I. potatoes at the wholesale level. If this is true, Ontario producers absorb the total transport margin in the P.E.I. landed price.

The trade is a full participant in determining the minimum price, which is arrived at by general consensus, taking into account, as an important factor, availability of P.E.I. potatoes in relation to demand. Export demand for P.E.I. potatoes would impact this situation. There are 16 potential participants in price determination discussions.

Since the inception of the Board, and the establishment of minimum prices, quality has reportedly increased substantially. Although, Ontario potatoes were originally discounted 15-20 cents/10 lb. bag, Ontario # 1's, now match the P.E.I. price at the wholesale level. P.E.I. potatoes continue to earn a premium at the retail level. P.E.I. potatoes generally receive double the display space afforded Ontario potatoes.

Table 24.

ANNUAL RAIL, CAR AND TRUCK UNLOADS OF POTATOES, IN OTTAWA AND TORONTO FROM SELECTED SOURCES, 1985 and 1986

Sources	OTTAWA				TORONTO				TOTAL			
	1985		1986		1985		1986		1985		1986	
	000's	%	000's	%	000's	%	000's	%	000's	%	000's	%
ONTARIO	6.8	11.1	8.6	14.7	34.0	21.5	37.7	18.9	40.8	18.6	46.3	18.0
P.E.I.	33.6	54.9	27.5	46.9	91.8	58.1	105.7	53.1	125.4	52.6	133.2	51.6
N.B.	1.1	1.8	3.0	5.1	1.8	1.1	0.1	--	2.9	1.3	3.1	1.3
U.S.	5.0	8.2	6.6	11.3	27.4	17.4	54.9	27.6	32.4	14.7	61.5	23.8
OTHER	14.7	24.0	12.9	22.0	2.9	1.9	0.8	0.4	17.6	18.0	13.7	5.3
TOTAL	61.2	100.0	58.6	100.0	157.9	100.0	199,2	100.0	219.1	100.0	257.8	100.0

Source: Idem

The data in the Table show the dominance of P.E.I. potatoes in the major commercial Ontario fresh markets. Although Quebec supplies are important in Ottawa, they are marginal on a provincial basis. U.S. supplies approach the importance of Ontario supplies in these markets. Compared with 1980, shipments from New Brunswick have declined, and those from the U.S. have increased in importance.

Both Ontario producers and government appear to be committed to the Development of national supply management. There is some anxiety, nevertheless, on the part of Ontario processing and seed potato producers. Facing a declining trend, however, Ontario producers seek to consolidate their historical acreage on a more lucrative basis. There exists the current dilemma of alternative production opportunities for Ontario Tobacco Producers. With relatively low returns for Ontario potatoes, potato production has not, as yet, attracted any shift. However, facing little in the way of other production alternative opportunities, a production influx could occur, and depress returns further. Ontario potato producers would be anxious to forestall this with historical acreage limits. Producers feel that Maritime potato production is likely to continue to attract federal and provincial support which Ontario growers cannot expect to achieve.

The Ontario government may have another agenda which calls for future increases in Ontario quota, which would permit them to ease the tobacco producers' problem, and gain a larger share of local markets.

The Manitoba industry was originally organized through the establishment of a Commission in 1964-65, and converted to a Board in 1968-69. The Manitoba Vegetable Marketing Board administers the whole vegetable industry, and markets through a producer association (Keystone Vegetable Producers Association), as sole agent. The potato industry is managed through marketing quotas, which are owned by the Board.

A bulk contract is negotiated with processors. Producers deliver (based on signed delivery orders from the Board) in bulk 2,000 pound pallet boxes. The processing market makes up 80-85% of production, divided between frozen french fries (Carnation (2/3) and McCain (1/3)), with 10% of the crop going to chips, and 10% exported (graded Canada # 2) to Simplot in North Dakota.

In the fresh market, all product is sold through the Board's appointed agent (Keystone Cooperative), from whom all retailers must buy. The agent does all packaging smaller than 50 lb bags. The price set by the Board (two wholesalers are on the Pricing Committee) is based on the laid-in price from North Dakota, or Minnesota, depending on the period of the year.

Non-quota product will be sold by the Board only when all quota product has been disposed of. Sale returns from Manitoba, Saskatchewan, and the Lakehead are pooled (weekly), with producers receiving net returns after cost. There are some shipments into Toronto.

Many Manitoba producers would like to exclude all Manitoba production for processing and processing products from regulation by the national agency. It is currently excluded from Manitoba market regulation. They would also like to exclude seed production. Manitoba producers appear to be quite satisfied with their current regulatory mechanism, and the current results from processing. (Even with lower yields the table return also appears attractive (See Table 13)).

The Manitoba government is concerned that other provinces do not provide sufficient legal support for potato supply management. The government wishes, with all processing products excluded, that regulation be restricted to domestic fresh use, with no surplus disposal mechanism, except at the individual producer cost. (Both government and producers are concerned about the surplus disposal process.) They see the exclusion of any surplus, or diversion product from any historical 5 year average quota base. The industry and government are prepared to work toward a national agency based on the acceptance of these conditions. It appears unlikely this could prove acceptable, with almost all Manitoba product excluded, while dictating conditions which will eliminate most program benefits.

In Saskatchewan, there is currently a Vegetable Marketing Commission, which is a voluntary body. A compulsory check-off is being sought by producers through a new marketing plan. But there appears to be little inclination at the stage to seek quota or pricing authority. Government is concerned about the local quota level a 5 year average would provide, and the mechanisms, and the impact, of interprovincial and international product flow if Saskatchewan remains an unregulated area. Increased potato production looks much better than current grain production, and there is concern about opportunities for growth and local market stability. The Saskatchewan government is unlikely to favor signing a Plan, unless a growth provision could be negotiated at the outset. Even so, it does not appear promising that current interest would be sufficient for producers to insist on becoming part of the Plan.

In Alberta, a Commission is also in place, organizing 177 licensed producers. About 55% of production goes to processing (3 processors), and 25% to seed, including export. There is a 6.5 cents/cwt. levy for table and seed production, and 5 cents/cwt. for processing. Product flows into Alberta for the table market. There are plans for a minimum pricing program. There appears to be some ideological opposition to supply management.

With its markets in the processing and seed market, and only a small table market sector on an import basis as an alternative outlet. Alberta producers perceive little benefit from being associated with national supply management. Potatoes have proved to be a better option than a number of local alternative crops, including, currently, grain. The historical growth trend would discourage interest in such a measure as likely to close off growth opportunities. The responses to the National Farm Products Marketing Council from Alberta were from private processors and packers, who were opposed to the proposed program, and the Alberta Potato Commission concerned with relations between unregulated and regulated geographic areas of the industry, and the export trade.

For British Columbia, with a long history of organized marketing, and full regulatory legislation in place, there is general support from producers for a national agency. About 50% of production is marketed for table consumption, in competition with U.S. product. About 15% goes for seed, and 10% for processing. The balance is non-commercial product. B.C. producers hold about 60% of their own market, with the balance supplied by Washington, Oregon, and California. B.C. producers succeeding in proving injury from U.S. supplies, and established import values are currently in place (Special Import Measures Act) to reflect cost of production in the

U.S. producing areas and prevent dumping. Costs in these areas are lower than in B.C. (The situation is far different from the sale of premium-priced U.S. product in the East). B.C. producer feel they have been injured, as well by the shipments of surplus Alberta potatoes. B.C. also receives processed potato products from the Prairies.

There are approximately 160 growers organized in the B.C. Vegetable Marketing Commission, with voting within the Commission taking place by commodity.

4.2. SITUATION IN SELECTED PRODUCTION AREAS OUTSIDE OUTSIDE OF CANADA*

4.2.1. Introduction

This report compares the Canadian, Netherlands and the United States potato industries. The comparison is presented so as to highlight the differences across the three nations both from statistical and institutional perspectives. The analysis has focused on industry trends as well as the marketing agencies and strategies in each country. The comparisons may be instructive as to the types of organizational initiatives required to be successful in competitively marketing potatoes.

The countries selected for comparison: the United States and the Netherlands are appropriate for a number of reasons. The United States is Canada's largest export customer. The U.S. is also a major potato producer. Canada competes with selected regions of the U.S. for both tablestock and seed sales.

* Statistical background data is provided in Annex IV.

The Netherlands achieves the highest average yields among major potato growing nations and is the largest exporter of potatoes in the world. It leads all countries in the export of seed, tablestock and processed products. This success is a result of a tradition of sophisticated marketing practices, some of which may be applicable in Canada.

The United States and the Netherlands ranked 4th and 10th respectively in the world in terms of total production. Other major producers are shown in Table III.1. The United States is the largest free world producer of potatoes. The United Kingdom ranked 8th in the world in production from 1980 to 1982. The Netherlands ia a more appropriate model however for two reasons:

- The Netherlands is more active than the UK in the export trade, particularly outside of the E.E.C. and Mediterranean markets.
- The United Kingdom operates under a Government supported supply management and price stabilization program. This program allows producers the option of contracting a portion of this acreage with the Potato Marketing Board at a predetermined price. Should market prices exceed the contract price, the producer may be released from the contract. The government covers the cost of any difference between average market prices and contract prices. This price stabilization program has been expensive for the U.K. government.

There is no such public sector intervention in the Netherland industry. The price stabilization system in operation there relates only to seed potatoes, is entirely industry financed, and provides only a "safety net" floor price well below market prices.

4.2.2. Production and Market Overview

The principal statistics of the Canadian, United States and Netherlands industries are presented in summary from in Tables IV.2. More detailed statistics are provided in Tables IV 3 to IV.11. The discussion which follows highlights the major differences between the industries in each country.

Production

Annual potato production in Canada has averaged just over 60,000,000 cwt. in recent years. The United States, our principal trading partners, produces over 300,000,000 cwt. The Netherlands industry produces approximately 140,000,000 annually. Production levels are increasing at between one and two percent annually in all three countries. Canadian production has increased at a slightly faster rate in recent years.

Production increases in Canada are resulting from gradual yield improvements, as well as increasing acreage, mainly in Prince Edward Island.

In the United States, while acreage has fluctuated from year to year, there has been no general increase. Dramatic acreage decreases in Maine have been offset by small increases in a number of other states. Production increases in the U.S. are principally attributable to gradual incrases in average yield. In the Netherlands, marginal rates of growth in acreage and yields account for production gains.

Consumption

Per capita, consumption varies significantly across national borders. Canadians consume 151 pounds each per year, compared to 116 pounds for Americans. The Dutch, however, consume over 180 pounds each. European countries tend to eat a lot of potatoes. Per capita, annual consumption is 220, 226, 372, and 213.4 pounds for Britain, Poland, East Germany, and Russia, respectively.

Consumption on a per capita basis has been reasonably stable in Canada, the United States and the Netherlands in recent years. In the United States, the trend toward increased consumption of frozen product (french fries) has leveled off and is perhaps now decreasing slightly. This decrease is largely offset by a small increase in fresh consumption. Comparative data regarding each product form was not available for Canada although a similar trend could be expected. (Total per capita consumption is reported for Canada.) The statistics are not encouraging. Per capita consumption in Canada has gradually, but steadily, decreased over the past seven years, at almost 2% annually. In the Netherlands, consumption has been comparatively stable over the same period.

Utilization

The Canadian industry contrasts with U.S. and the Netherlands in two principal areas with respect to crop utilization. First, its processing sector consumes only 26 percent of production versus approximately fifty percent in both the United States and the Netherlands. Second, twenty-one percent of New Brunswick and Prince Edward Island production is lost in storage, or due to culling or disposal. This is over twice the United States rate of ten percent and triple the Netherlands average of seven percent. The lack of Canadian processing facilities to utilize off grade stock is important in accounting for this costly loss percentage.

The seed business in Canada is proportionately as large as in the Netherlands and much stronger than in the United States. Seed sales represents twelve percent of total production in both Canada and the Netherlands, but only six percent in the United States.

The processing sectors in each country are different as well. Canadian processors primarily make frozen products and chips. The United States industry is more diversified in that it also has a significant dehydrated sector, and the remains of a once-thriving starch industry. The Netherlands is different again. The largest segment of its industry is industrial processing (the starch business). It consumes nearly one-third of all production and twice that of the food processing segment.

In Canada, the utilization by product type has been stable over the past five years. The french fry business grew steadily until around 1980. Growth has since leveled off. In the United States utilization has also been reasonably stable, however, the frozen processing sector has shown sufficient growth to more than offset declines in the dehydrated segment. The volumes being utilized as tablestock have been on the increase since 1980, reflecting population growth and, as mentioned previously, stable and perhaps increasing per capita consumption of fresh product. The major trend in domestic utilization in the Netherlands is the growth in volumes for food processing. The other segments show year to year fluctuations, but level overall usage.

Exports

Canada exports approximately twelve percent of its potato production. Nearly half of the export volume represents sales to the United States, principally of tablestock. Seed sales account for one third of exports, and over seventy percent of this volume moves to offshore markets. Processed products account for nearly twenty percent of exports.

The United States exports less than three percent of its production, and thus only twenty-two percent more fresh weight equivalent product than does Canada. Export sales are primarily comprised of processed shipments, both dehydrated and frozen to offshore markets, such as Japan. Shipments of tablestock to Canada are also a major component. The U.S. has not had a significant seed export business.

The Netherlands are the biggest potato exporter in the world. Over one quarter of their production moves to foreign markets. Tablestock shipments, primarily to other E.E.C. countries, account for forty-three percent of their exports. Seed exports are next most important by volume. Approximately 9,000,000 cwt. of seed is exported, which is more than four times Canada's seed export volume. The Netherlands' shipments to non-E.E.C. countries was 3,200,000 cwt. compared to 2,000,000 for Canada. The Netherlands shipped over 1,000 tonnes to twenty-five non-E.E.C. countries in 1985, and had over sixty customers in total. Canada had five non-E.E.C. customers buying at least 1,000 tonnes, and seventeen customers in total. The other major component of the Netherlands' exports trade is starch.

Overall export volumes are growing for Canada and the Netherlands, but not for the United States. Canadian table shipments have increased since 1980, as have processed exports. The seed business has fluctuated significantly, and faces challenges in maintaining its E.E.C. customers. Overall, on the strength of table sales, Canada has enjoyed steady export increase averaging over 10 percent since 1978.

United States exports have declined overall in recent years primarily as a result of decreases in dehydrated sales. Exports of frozen products (doubling since 1980) have increased significantly as a result of aggressive activity in Japan, but this has not been sufficient to offset the decrease in dehydrated shipments. The Netherlands has been able to increase seed exports on a consistent basis, and thereby offset declines in table and starch export volumes.

Imports

Canadian imports represent about five percent of domestic production. These imports are principally spring and summer harvest tablestock from the U.S. The United States imports only thirty-five percent more than Canada, a volume equal to 1.3 percent of its production. The majority of these imports are from Canada, and in fresh form. The Netherlands imports a greater quantity than either Canada or the United States: 6,000,000 cwt. This volume is a combination of early season tablestock and potatoes for starch.

Canadian imports have been essentially constant in recent years. U.S. imports overall have been on a slightly declining trend since a 1982 peak. The Netherlands have realized a gradually increasing volume of imports.

4.2.3. Institutional and Strategic Profiles

The statistical review has demonstrated significant differences in the Canadian, United States, and Netherlands industries. The purpose of the profiles which follow is to describe the industry structures, including distributions channels, producer associations, and government relationships within each country. These institutional profiles serve to highlight additional differences between the countries.

4.2.3.1. United States

The United States potato industry is comprised of a number of producing areas, all of which grow different varieties, service different primary markets, and also vary in terms of marketing institutions and structures. In total, 40 of the 50 states have commercial potato production. Many areas produce primarily for local or regional markets. Between ten and fifteen percent of the total crop is spring and summer production. For the purpose of comparison, attention will be focused on the three largest fall harvest areas:

- the Northwest: Idaho, Washington, and Oregon
- the Red River Valley: North Dakota and Minnesota
- the Northeast: Maine

1. Northwest

The Northwest "potato producing" region is composed of the states of Idaho, Washington, and Oregon. Idaho and Washington are by far the largest potato producing states in the United States. The three states now account for 63 percent of U.S. fall production. This represents dramatic growth from the 1961 - 1965 period when the region accounted for 43 percent of fall production. Most of this growth has occurred in Washington, an area which has realized yields in the 500 cwt./acre range. Potato lands across the Northwest are dependent upon irrigation.

The industry in the Northwest was built on the Russet Burbank variety. For example, it is 98% of Idaho production. This variety is excellent for french fries, and is popular for baking. The thick skin of this potato protects it from bruises and blemishes, and has facilitated marketing. The region has also established loyal markets in the food service trade, providing high quality, closely graded count packs which command premium prices. Variety uniformity provides scale advantage in industry handling. The product is grown under irrigation, leading to yields, in Idaho, between 260 and 320 cwt./acre, depending on the region.

The Northwest industry operates on a very centralized basis around freezing and dehydrating processing facilities. The major processors:

American Potato
Ore Ida
Carnation
Lamb - Weston
R.T. French
Tagerres
Simplot
Nonpareil

are located in the region. Farmers rarely pack their own potatoes, but sell them F.O.B. their warehouses to one of the processors, or a dealer. The region uses two processing approaches to maximize returns from available product through a combination of processed and fresh marketing. Processors making fresh frozen product, select the best of their purchases (5-10%)

for fresh sales in institutional count packs and closely graded consumer packs. Most of the balance would be used for frozen products. Off-grades would be sent to dehydrators. The dealers who ship fresh, primarily, work with a dehydrating facility to move off-grade material. The availability of a market for cull potatoes enhances the value of producer offerings. This interaction between fresh and processed offers a competitive advantage not available in P.E.I.

In Idaho, there were ten dealers who handled sixty percent of fresh shipments, or an average of 2,300 loads each. Some 50-75% of processing potatoes are grown under contract, in Idaho, and about 70% of production is processed. In Idaho, there were only 59 authorized fresh pack dealers (1978) who shipped an average of 655 carloads each. Farmer packers are uncommon in Idaho. The trend has been away from 100 lb bag shipments, and to 10 lb bag loads and 50 lb count pack cartons (23%, 25-30%, and 35% respectivel in 1978).

The degree of centralization in the industry facilitates adherence to grading standards, and provides for stability within the industry. Assisting the industry in providing orderly marketing are Federal market orders in each state which require mandatory F-SIS inspection. The Idaho and Eastern Oregon Potato Commission is the most important institution in this regard (Order # 945). The Federal-State Inspection Service (F-SIS) operates in most potato growing areas of the U.S. The service is provided cooperatively by the Federal government and respective states, but financed by the industry on a volume levy. Training, licencing, and monitoring the performance of individual inspectors is a Federal responsibility. Each state is responsible for supervising the inspectors and the logistics of providing the service. The above marketing order is credited with the successful creation of the image of the "Idaho Baker" which has made Idaho synonymous with potato in North America, because of the region's reputation for consistently delivering quality.

In Idaho, in addition to mandatory inspection, the market order provides the State Council with the power to set a minimum size for U.S. #1 grade each year. The mechanism can be, and is, used as a supply management mechanism in years of abundant production. The minimum diameter is usually set at 2 or 2 1/4 inches (approximately 6 ounces, and 2 1/2 " diameter). The count pack premium market makes for uniform table market product for the 20-25% of the crop shipped fresh. Shipments equal to about 20 million cwt.

The Idaho industry also has legislation supporting the use of the "grown in Idaho" labels. These labels must be used as appropriate, and also identify the place of business of the potato packer.

The Northwest industry is active in promotion. Idaho's Potato Commission, another major institution, has been a leader in consumer media, including television, radio, and magazines, and uses a professional public relations firm. They also employ a "sales" staff who visit the trade, and arrange cooperative promotions. These activities and education efforts are financed by an advertising tax which is paid 60 percent by the grower, and 40 percent by the first handler. This tax recently raised an annual budget of over $4 million, of which over $2 million was spent on advertising. Idaho advertises right across the United States (42 states), using primarily television spot and print magazine ads.

The State of Washington is also active in promotion, but concentrates on the food service industry in support of its count pack products.

Grower associations also exist in each Northwest state to negotiate contracts with the processors. The Idaho association, Potato Growers of Idaho, a third key institution, is a voluntary high profile group, which publishes a magazine, and has been represented in Canada - U.S. trade discussions. It represents, and negotiates, for 75% of all processing growers (1,500 members). They pay dues of 1/2% of gross potato sales to a maximum of $1,250. A base price for #1's and 2's is negotiated with delivery time differentials. Processing grade B's are paid at a separate base price. There are incentives for specific gravity, quality, size (10 oz.) color, and freedom from bruising. Potatoes are purchased F.O.B. producer storage. The individual grower negotiates amounts and delivery times directly with the processor.

The Northwest industry has prospered as a result of strong leadership and marketing savvy from within the industry. Government's role has simply been to provide the industry with the jurisdiction necessary to manage itself. Voluntary producer organizations combined with compulsory grading standards have benefitted growers and the industry. The participation of dealers in promotion is noteworthy.

The seed business in the Northwest is restricted to a specific region of Idaho which concentrates on seed. The area serves local markets and there is no special marketing agency for this segment.

2. The Red River Valley

The Red River Valley (North Dakota and Minnesota) is the second largest producing region of the United States, accounting for twelve percent of the fall crop. The region grows primarily round white potatoes for chipping, although it ships round reds and Russets to the tablestock market. There is an active seed industry as well. Irrigation is not used in this region. Yields are in the 175 cwt. per acre range. An interesting characteristic of the region is that, while it grows primarily chip stock, the processing occurs in plants outside of the region across the United States. There are, however, some french fry plants in the region.

The Red River Valley industry is highly centralized, but has few industry associations and no legislative framework such as a market order. There is the Red River Valley Potato Growers' Association which represents (70%) the growers in negotiations with the chip plants. There is a 2 cents/cwt. levy. All other marketing tasks are undertaken by the dozen, or so, major dealers which operate centralized packing facilities. Table potatoes are typically washed and graded, and bulk shipped to terminal markets for packing. The area has suffered from transportation difficulties. Rail facilities have declined, and lack of backhauls has reduced truck availability. This has led to development of a trucking cooperative by the Association.

The Red River Valley industry has been reasonably stable, because of its ties to the chip industry. Its location in the central U.S. enables it to efficiently service plants across the country. Increased chip volume has offset table shipments lost to competitors in the Northwest. The region has, nonetheless, been a strong competitor in table markets on the east coast, due to the differentation it has achieved with quality red potatoes. North Dakota has developed a market for its certified seed (The North Dakota Potato Commission).

3. The Northeast

The Maine potato industry has been in decline for the past twenty years. In the early 1960's, it produced nineteen percent of the fall crop. It now produces less than ten percent. Maine primarily grows round white potatoes for tablestock markets, but also has established processing and seed sectors. The tablestock industry has been hurt by a reputation for inconsistent quality and shipping smaller potatoes. Maine potatoes sell at a discount to either P.E.I., or Idaho potatoes.

"Maine has a very fragmented, decentralized, table stock marketing system"*. About fifty percent** of growers pack their own potatoes and then sell them to one of the 135*** licensed potato dealers. Fifty percent of dealer sales are then to chain stores, and thirty-three percent to terminal market wholesalers. The growers who do not pack their own, ship in bulk to one of the fifty to seventy-five "centralized" packing lines who may sell to dealers or directly to terminal market buyers. Most growers who pack their own are only capable of putting up paper 50's. The centralized packing facilities are usually able to brush, wash, and pack in paper, or cello, from 5 pounds upward. The largely decentralized nature of the packing and dealer systems has three principal results. First, it burdens the industry with a lack of uniformity in its quality and packing standards. Second, the number of sellers ensures that prices are driven to the lowest possible level. Third, it makes it relatively costly and inconvenient for third party inspection.

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* Putnam, p. 104

** In 1974, 57%

*** Putnam, p. 105

Maine does not have a market order requiring F-SIS inspection, and it is felt by some that this has contributed to deteriorating quality in the industry. Where F-SIS is used, the system has been a source of controversy due to its cost and allegations of inconsistency. Maine does have a Potato Branding Law which is to ensure that potatoes are truthfully labelled, and appropriately described in accompanying shipping documents. Enforcement of the Branding Law has been sporadic due to a lack of inspection personnel.

Maine has begun to address its quality problems with a program of voluntary trademarks. Historically, the industry has put everything over 1 7/8 inches into the same pack. The "State of Maine Trademark Grades" define larger, closer grades, and better quality standards. The program is not yet widely used. Maine collects a tax for promotion, which generates a budget of $500,000 annually.

The seed industry is important to Maine, and about 1/3 of all acreage is entered for certification. As in P.E.I., acreage is entered for certification to provide a marketing alternative. The industry primarily services Atlantic Seaboard areas to the south as well as the Northeast. The seed industry is becoming more aggressive in domestic markets. The industry has not, however, organized any agency, such as Potatoes Canada, for promoting export sales. Each seed dealer is on his own and, as a result, the industry is not expected to realize significant export sales.

The processing industry is becoming less important in Maine. McCain's owns most of the freezing lines, and there are few other chip plants. There is a body called the Agricultural Bargaining Council (ABC) which negotiates contracts with processors on behalf of the growers.

The Maine industry has just undertaken a major reorganization in that a new Potato Board has been set up to coordinate, and oversee all potato industry associations, including the:

- Agricultural Bargaining Council (contract negotiations);
- Potato Commission (research and advertising);
- Potato Council (policy and lobbying); and
- Sales Association (dealers).

This step has created a new level of optimism and enthusiasm within the industry, and it is hoped that it will herald a revitalization of the industry. The Board is still in the formative stages, in the process of finding an executive director.

4. United States - National Level Activites

The United States has a number of National Trade Associations associated with the potato industry, but no system of cooperation and regulation on a par with the Dutch industry. The principal activity undertaken on a national level is promotion. The National Potato Board has been very creative and aggressive in promoting the trade and consumers. They have been credited with changing consumer perceptions of the potato as a high calorie foodstuff. One cornerstone of this health-oriented awareness campaign is their sponsorship of the U.S. Women's Olympic Gymnastic Team. The Board has also been aggressive in promotion in Japan. One program purchased consecutive full page ads in Japanese papers, promoting "U.S. Fries". The U.S. government has provided $2,000,000 to be used for export promotion in the Far East. The U.S. has a "National Potato Research and Education Foundation", which has a mandate to identify new applications for potatoes in food processing. The foundation appears to be supported by the Potato Board.

The other major purpose of the Potato Board is to serve as an information exchange among producers. The Board also lobbies to a small extent. The diversity of conditions across the U.S., and competition between growing areas, appears to make it difficult for a significant degree of national level cooperation.

4.2.3.2. Netherlands

The potato industry is very important to the Netherlands, accounting for twenty-five percent of agricultural acreage in production. The Netherlands industry is an export success story, as a result of an effectively and highly organized program of industry and government cooperation. Potatoes are not covered by an E.E.C. common agricultural policy, and are, thus, traded freely within the community. This has, reportedly, attracted the best personnel to the industry at all levels. The Netherlands industry consists of three distinct segments: "ware", seed, and starch. The "ware" industry includes all potatoes for human consumption, both table stock and food processing. Seed growers tend to be dedicated to that market, using varieties and technologies specifically designed for specific customers. The starch industry is located in the Northeast, and grows varieties suitable for industrial processing only.

1. Tablestock

Tablestock, or ware, potatoes are sold into a completely open market. Growers typically sell in bulk to one of many wholesalers, or a cooperative. There are approximately 500 wholesalers, of which 100 control 90 percent of the volume. There are 15 cooperatives. The primary destination of ware sales in 1974 was as follows:

Destination	% of Crop
Private wholesalers	45
Cooperatives	35
Processors	6
Retailers	4
Consumners	10

Potatoes are packed by the wholesalers and cooperatives in a vareity of sizes and "sacks" from 2 1/2 kg. up to 1 tonne. The most common packing materials are clear plastic for smaller sizes and poly-net, and jute for larger sizes. Jute is being replaced by a woven poly package which is less costly to purchase and to pack.

The private wholesalers and cooperatives are the principal suppliers for the processing sector as well. Similar to the large dealers in the Northwest U.S., these operations divide the bulk lots from growers into table and processing stock. These merchandising operations tend to maintain sizable inventories to enable them to fill large orders received from export markets, or processing plants. This combination between table and processing is similar to the arrangement in the U.S. Northwest, which provides scale, flexibility, and maximized returns from available product.

a) Private Wholesalers

The private wholesalers and cooperatives are surprisingly similar in their operations. The private firms have advisory boards of growers which are given considerable input into management. They are also prepared to enter into participating contracts with growers. Growers sell to the wholesalers either on the free market or a contract basis. Free market sales are usually negotiated around weekly guide prices of a local exchange. A small commission of grower and merchant representatives announces prices for each commodity for the week, and these are used as a guide for subsequent transactions. The commissions meet and "set" prices on different days of the week in each major trading centre. Contract sales can be categorized into three types:

- Fixed Price Contracts offer reduction of uncertainty to the grower, and are attractive to those with debt burdens, provided the agreed price is sufficient to cover costs.

- Participation Contracts operate on a low basic price, and the sharing, on a proportional basis, of the additional sum obtained above this at the time of the sale.

- Pool Prices are similar to the cooperative pool price system, where the merchant deducts an agreed service charge from the total pooled sales, and the remainder is returned to the grower.

Growers, chosing to sell forward, will contract about 60 percent of their crop, and sell the remainder at spot price, in all probability to the same buyer.

b) Cooperatives

The cooperatives offer an annual pool price contract for each potato variety. The system ensures that each member receives the average price for all sales from the pool over the season, but cannot either forecast the price in advance, or guarantee a minimum unit return. Pools are invariably voluntary to participating farmers, but once in the pool, they generally have to commit 100 percent of product, or, in some cases, a fixed volume of product. Growers show strong loyalty to their merchanting organization, whether it be cooperative or private. Cooperatives guarantee a market for all of a grower's product. This strong cooperative option has probably encouraged private sector involvement of producers.

c) Futures Market

This market for ware potatoes operates daily in Amsterdam for trading in the months of November, February, March, April, and May. There are over 500 participants with individual accounts, but since a proportion of these accounts represents groups of traders, the total number involved is somewhat greater. About 15 per cent of participants use the market speculatively, and their activities are an important source of revenue. Wholesalers make very little use of the futures market, but it plays an important role in trading, particularly among processors.

This option is no longer available to North America's producers.

d) Industry and Government Bodies

The Netherlands industry is highly organized and regulated, although there are no institutions which attempt to directly influence supply, or price.

1. Produktschap voor Aardappelen (PVA)

The Potato Industry Commodity Board represents all players in the production and marketing network. The Board is funded by a statutory levy on producers, wholesalers, and processors. Its principal tasks are to:

- facilitate consultation between industry members;
- provide information and advice to the government; and
- define quality standards.

The minimum standards established by the PVA each year are "significantly higher" than those established by the European Committee on Potatoes.

2. Netherlands Institute for Sales Promotion of Potatoes and Potato Products (NIVAC)

NIVAC shares the same chairman as the PVA. This agency is active in research and promotion for ware potatoes, and is funded by PVA levies.

3. General Netherland Inspection Service for Field Crop and Seed Potatoes (NAK)

The NAK is one of three inspection agencies associated with the potato industry. It is charged with supervising the health and quality of seed and ware potatoes. It is funded by government (50%0 and trade (50%). The trade funding is raised via a cost for tags. NAK inspects fields in May, and therefore also knows potato acreages. When potatoes are moved off the farm, a permit is required from NAK. As ware potatoes are graded and bagged from storage, they are checked by NAK, and certified for variety and size. With new cost recovery approaches by Agriculture Canada, the Canadian system is moving in this direction.

4. Plantenziektenkundige Dienst (PD)

The PD, a department of the Ministry of Agriculture and Fisheries, is the agency responsible for export inspections. The PD normally operates at the packer's premises as an export consignment is being prepared. Exporters pay for the service and pay a premium for off-hours inspections. As of 1985, only packaged ware shipments are inspected. The inspection and valuation of bulk lots of ware potatoes is left to the trade. This, obviously, is a service provided without direct cost by Agriculture Canada.

5. The General Inspection Service (AID)

The AID, also a department of the Ministry of Agriculture and Fisheries, inspects all premises concerned with produce to ensure adherence to regulations. One key regulation relates to the general requirement that potaotes shall not be grown on more than a one in four rotation. This disease and quality control measure is not a requirement in Canada, and is a producer decision. The AID also randomly inspects shipments.

The AID and PD have strong sanctions at their disposal. Exporters, who display an unwillingness to meet regulations and standards, will have difficulty scheduling required inspections.

6. Other Institutions

The other associations are the Association of Dutch Potato Wholesalers (VBNA), and the exporters' association, VENEXA. There is also a Potato Processors Association, VAVE. Membership in these associations is voluntary. Each works closely with the statutory bodies described above.

2. Seed

The seed sector revolves around a small number of private breeders and their commercial agents, most of which are also involved in exporting on a substantial scale. A relatively small number of wholesalers are involved in exporting and the three largest commonly account for almost 60% of exports. The most important destinations for Dutch seed potatoes are France, Belgium, West Germany, and Algeria.

Farmers sell in three different ways:

- publicly owned cooperatives;

- privately-owned cooperatives, e.g. Hetten en Zonen; and
- pools.

Seed growers, in contrast to ware growers often pack their own potatoes.

The seed business in the Netherland contrasts dramatically with North America, because of breeders' rights. Those who develop a variety in the Netherlands retain control over its multiplication as seed. The supply of each variety is, thus, restricted by the licence holder to an amount appropriate to given market conditions. The merchanting organizations controlling the restricted varieties supply seed to growers who must then sell their entire crop back to the merchant. The merchant, then, is the exclusive distributor of the variety in international markets, and faces price competition only from substitute products.

This system forms the basis of a sophisticated seed export marketing system. Performing the missionary work for the seed exporters is NIVAP, the sister of NIVAC concerned with seed potato promotion. NIVAP, like Potatoes Canada, grows test plots in target foreign markets. It provides technical assistance to these countries, and promotes all Dutch seed exporters and their varieties at a general level. The sales organizations of the major seed merchants follow in their tracks, promoting their respective protected varieties. These firms are aggressive in introducing new varieties, a strategy which has been effective in maintaining buyers interest over the long term. These firms are able to command premium prices for their seed because they develop varieties for the conditions in off-shore markets, and have their grower suppliers grow these varieties to market preferred size specifications. The combination of the NIVAP support, aggressive selling and breeders' rights have produced a formidable exporting system unparalleled in the world.

The seed growers have an industry organization, (STOPA), which principally operates a price insurance scheme. The program is financed by seed producers and wholesalers through contributions to their Bedrijfschappen (Industry Board). In 1985, levies of Dfl 75.00 per hectare were paid by the grower and Dfl 3.50 per tonne were paid by the trade. The system is entirely industry financed, and provides only a safety net price, Dfl 280 per tonne. This corresponds to roughly between 4.25 and 4.50 cwt. Canadian. In recent years, the fund has been depleted due to record surpluses of seed.

The industry also has a voluntary seed growers association (NFP). This association works closely with the PVA and other bodies coordinating the industry.

The information available implies that the potential profits from the marketing of controlled varieties has provided a powerful challenge to invest in, and promote, Dutch seed products. This situation (tailor-made varieties), heavy promotion together with the accessions of countries formerly Canadian markets into the Common Market, have placed Canadian seed exporters at a disadvantage, which will not be quickly overcome with current systems. A national agency could provide the potential for more rapid change.

3. Starch

The starch industry has not been profitable for the past 10 years, and this is not expected to change. The industry is regulated by an E.E.C. directive on starch extraction which incorporates a minimum price. The industry operates on a cooperative basis with growers making good losses incurred by the industry. The industry is notable because of its problems. The lack of profit pressures starch growers to grow ware potatoes, and this production capacity could flood the ware market. This problem points up one of the difficulties facing the provision of dehydrating facilities in P.E.I. The market for the products of such plants has not been buoyant in recent years.

4.2.3.3. Canada - U.S. Trade Relations

U.S. growers in both Maine and Idaho are complaining about Canadian imports. It is not expected, however, that their complaints will generate any significant trade action against Canada.

The principal spokesperson in the U.S. is "Dotty" Kelly of Maine. Kelly was formerly Chairman of the Maine Potato Council. She is now President of the "National Coalition for Fair Trade", a group representing all Americans "feeling the impact of foreign imports, and seeking fair trade with all countries". Kelly wants to close the border to potato trade until:

- all subsidies are the same (Canada vs U.S.);
- the I.T.C. changes its rules, so that groups seeking tariffs do not have to prove injury;

. Canada drops its standard container legislation.

Kelly receives little support in Washington, and is even reported to be an embarrassment to some people in the potato industry.

The Potato Growers of Idaho are also concerned that Canadian product is increasing competition for Eastern Seaboard markets.

The U.S. states in general, however, feel that Washington and the U.S.D.A. are not responsive to their concerns. Industry observers feel that the I.T.C. battle was lost, and that that is the end of the issue, provided the Canadian environment does not change signficntly. Nevertheless, even with the current regime, the U.S. upheld a finding of dumping. What could not be proved was that Canadian exports caused injury.

4.2.3.4. E.E.C. - Trade Policies

The E.E.C. is not expected to deal with its surplus producing agriculture sector for some time. In addition, consensus on the need for an E.E.C. potato policy is getting stronger, even in the Netherlands. This policy would presumably only serve to maintain, or expand, existing levels of production. This will make it increasingly difficult to sell seed to E.E.C. members, and also increase competition for other seed markets.

For the first time since 1975, there is talk of implementing a support program for potatoes. There is support from France, Italy, and Spain. A basic price would be established, based on the three least extreme years of the last five year period. These would be established for each 15 day period. Producers can intervene if the prices falls below 60% of the basic price, and government shall intervene with disposal programs at 40% of the basic price. It is sought that import licences be cancelled at this level, as well. There is a current government intervention in France, as well as the earlier mentioned program in the U.K.

As long as the E.E.C. is not prepared to tackle its surplus producing agricultural sector, there will be no grounds for rejecting the marketing board institution in Canada. This situation maintains this approach as a viable option for producers in Canada to consider, and its acceptability under GATT.

4.2.3.5. Summary

The review of Canada, the United States, and the Netherlands, has been valuable in illustrating the following:

1. Factors behind successful potato industres:

   a) BIG PLAYERS IN THE DISTRIBUTION CHANNELS (centralized industry). A more centralized distribution system can:

      - Provide for more uniform grading, because there are fewer people doing it;

      - Provide for more efficient inspection (fewer sites, larger lots);

- Facilitate investment in whatever packing technology the market demands;

- Provide more price stability - avoids the same bag of potatoes competing for the same order through two shippers;

- Find the highest value channel for each type (size of potato). It can pay someone to find markets for off grades, provided they have enough of them. There are marketing economies of scale.

b) SIGNIFICANT PROCESSING SECTOR

- An active processing sector provides a destination for all grades, including culls;

- Affords an opportunity to seek highest value uses, and higher producer prices, when competing processing activities are coordinated with other market alternatives by the same buyer.

c) WELL-DEVELOPED INDUSTRY INSTITUTIONS

- Strong institutions encourage promotion of industry products and aggressive marketing;

- Producer organizations encourage more equitable producer shares and resources to finance promotion and aggressive marketing;

- Industry institution builds consensus for excellence and product quality.

d) STRINGENTLY ENFORCED QUALITY/SIZE STANDARDS

- Quality is the key to seed exports - without it, you can not build a business;

- Quality tablestock saves consumers' time. They will pay to avoid scrubbing, peeling, and cutting out defects. They also know it saves them money, because they get more useable potatoes per pack;

- Close grading is essential for the institutional restaurant trade, and has become important to home consumers, because of the popularity of baked potatoes;

- "Brand" awareness and preference can be developed, if the industry is prepared to set, and enforce, standards.

2. Intermediate - Long Term Demand - Supply Balamce

All evidence indicates that there will be surplus potato production in North America for years to come. At the root of the problem is low grain prices in general. This prompts producers to grow more potatoes. The U.S. potato industry is operating at well under capacity, which means that whenever there is a prospect of a reasonable price, production cam be expected to increase, thereby spoiling the market. Maine has unused acreage which competes directly with Maritime Canada. On the other coast, Washington is pressuring Idaho with its lower cost of production (higher yields). This, in turn, forces Idaho potatoes eastward. The only forces at work in the U.S. to restrict production are trade journal editorialists and banks. Results arrive slowly, if at all. Canadian growers must realize that there will be downward pressure on prices in North America for the foreseeable future.

3. The Seed Potato Export Business

The seed export business will become more competitive in the next few years. The Netherlands will be working harder in seed markets because of their surpluses. The Maine industry will be doing more in seed markets because of its relative attractiveness.

4. Possible Canadian Industry Responses

A. The Canadian industry can do a number of things to respond to this situation, if it is to consider real change to assure the continued viability of the industry:

   1. Negotiate continued access to the U.S. market in return for continued U.S. access to our market.

   2. Develop mechanisms and capable of promoting, and expanding, markets for Canadian potatoes, including the development of new varieties markets (breeders' rights), and merchandising methods, brand advertising, and the financing processing facilities, if necessary.

3. Implement mechanisms to maintain profitability of potato production, including production, and harvesting research, and, if necessary, supply management associated with border control

The prospect of low prices for the foreseeable future suggests that neither the industry nor government will be willing, or perhaps even able to afford a price stabilization program. Supply management may be preferable, because the market, not industry or government, pays whatever price is required for the industry to be profitable. Increased profitability in the industry would enable it to pay for the inspection, promotion, and product development, and infrastructure, efforts required to maintain a healthy industry. A healthy industry could be more effective in offshore markets, as it would have the resources to support a Potatoes Canada, and negotiate with governments. The P.E.I. industry has demonstrated its ability to compete with other Canadian provinces, and this would not change within a national agency, provided its competitive advantage can be maintained.

5.0. ALTERNATIVE MARKET SYSTEM APPROACHES

5.1. IMPROVEMENTS IN THE CURRENT SYSTEM

5.1.1. Changes in Marketing Board Authorities or Regulations

Given the reality of the market system, are there modifications which might improve Board performances, assuming no change in the current market regime? This question brings with it the assumption that there exists a will on the part of government and those who would receive any new authorities, to exercise them. This remains problematic. Such an expectation would presuppose the consideration and implementation of some of the following measures:

Changes in legislation by the provincial government could be considered to provide that:

1. Membership on the Board should not be available to any individual who assembles the product of other producers, or who holds a direct financial interest in a body, aside from a cooperative, which carried on such activity. This would restore to the Board its primary function, the improvement of the producer bargaining in the marketplace without necessarily impairing its ability, together with dealers, in representing the industry.

2. The provincial government is permitted to dictate an underwriting, for a time, after consultation and acceptance by a Producer Board, of the furnishing of professional management advisory services for the Board, with a mandate to:

a) Implement internal reorganization to encourage planning, managerial responsibility, and professional team management of Board activities, achieving impartial administration of Board policies.

b) Formulate policy options for consideration by the Board, aimed at increasing producer shares of retail prices, including a watching brief on market prices.

c) Formulate consultation mechanisms to involve producers in major policy formulation, and to generate support for measures prior to their formal acceptance and implementation.

d) Devise formal consultation procedures to ensure dealer input, including the creation of an industry promotion program with financial assistance through a check-off from dealers, and their full collaboration in design and implementation. This could include new brand identities for premium quality product.

e) Negotiation of the basis on which the provincial government will assist in the development of the certified seed program, and new varieties development, which latter when successful, will be the property of government for availability to all P.E.I. producers with fees to defray program cost.

f) Negotiation of the basis of Board/Government extensions collaboration to attack harvesting methods on a priority basis with the aim of increasing the percentage of saleable potatoes, reducing culls, and lowering producer unit costs.

3. Clear authority to collaborate with other provincial marketing boards in the establishment of minimum producer delivery prices. This could have a positive marginal effect on producer prices within the North American marketing scene.

4. Change in the dealer franchise aimed at requiring open market access as a condition of the license. There are, of course, other ways to discriminate against, or discourage, potential suppliers, e.g. a service charge based on volume offered, basic offer price, etc.

5. The implementation of measures to discourage dealer numbers, which can lead to increased bidding down of the price of P.E.I. potatoes, e.g. the maintenance of minimum dealer facilities expensive bonding requirements, substantially increased fees for licenses, etc.

6. Clear authority to establish single-desk selling, and pooling. This would provide the Board with an option to offer producers, if minimum pricing could not be enforced.

7. Clear authority to permit a producer-oriented board, to establish a voluntary marketing cooperative or corporation in the Quebec style. The experiences of the Quebec Income Assurance Fund for Potatoes with its very substantial losses, even with this vehicle, shows that this no panacea, but merely balances market power at a high cost. (Losses may also be a consequence of the absence of collaboration between Boards.) This approach would likely be more feasible in the current environment, and may be an available remedy under current legislation. The techniques and mechanics would

need to be carefully laid out in an examination of feasibility, including the network of arrangements which would be necessary to build a successful auctioning process, etc.

Dealers would obviously oppose such a measure, as its success could eliminate some of them as intermediaires. On the other hand, this measure has not been discredited by poor implementation in the past. Being a private venture, it eliminates some ideological opposition. The N.F.U. would, in any event, oppose any of the indicated propositions as half-measures. This mechanism would also permit collaboration with other Boards, but the firm would be open to restraint of trade prosecution, if this was too overt.

(A practical problem would be garnering the support of the 12% of larger producers, (many of them dealers), marketing 75% of current production, for such a body.)

All these measures may offer only a marginal impact on producer returns, since in the current open market system, the daily P.E.I. producers price is dictated by the lowest value outlet at which the bulk of offered product will be cleared from the market. The one measure which could capture a significantly larger producer share of retail prices would require single-desk selling, combined with marketing quotas and pooling in the Canadian Wheat Board style, i.e. #6. These are mentioned together because a one-desk selling operation is likely unsustainable, unless it is implemented with pooling and marketing quotas. While these things are apparently unacceptable in the current climate, such measure would enable the Board to:

a) Market directly to wholesalers and brokers. Existing dealer margins would not likely be saved, but absorbed in large measure. However, marketing margins should be reduced, particularly during periods of price volatility.

b) Recapture for producers of windfall gains (and losses) otherwise absorbed by intermediaries during periods of price volatility.

c) Reestablishment of a bargaining power balance between producers and large buyers.

d) Discriminate more effectively between markets to ensure P.E.I. product is sold for highest value uses, i.e. recapture a portion of count pack margins.

e) Negotiate better terms with processors in the sale of non-contracted product.

f) Eliminate perceived discrimination by buyers.

g) Permit more effective collaboration with other Boards to maximize producer returns during periods when U.S. supplies are scarce and expensive.

Real results are not likely without effective collaboration of this kind. This may be difficult to achieve on a voluntary basis, but it is theoretically possible, given P.E.I. dominance in the market during most of the marketing year. This would not prevent boom/post cycles. However, given one desk-selling, and Board collaboration, this is the one measure which could materially affect producer shares of total returns, particularly when prices for U.S. product is high. There could be more unsold product, but total revenue could be substantially higher. (Dealer risk would be materially reduced as well, justifying reduced margins). The biggest stumbling block could be the development of satisfactory authorities in New Brunwick, and the collaboration of its Agency.

It should be emphasized again that all these measures do not change the likelihood of continued boom/bust cycles. They merely permit, to varying degrees, a better deal for producers within the existing situation. As indicated, the most effective measure is the single-desk selling/pooling mechanism. The next most effective, and more politically feasible, may be the establishment of a private marketing arm. Further, it must be recognized that all major suppliers (provincial producer institutions) must have similar authorities, and be willing to implement them.

5.1.2. Amending Dealer Franchises

This approach speaks primarily to using existing authorities to amend dealer practises, in the direction of encouraging higher producer returns. Since jurisdiction is limited to P.E.I., intervention is more limited. This approach cannot respond to the need for major improvements in the wider market.

1. Concentration could be encouraged by raising the dealer fees, facilities requirements, bonding costs, etc... This would likely reduce the number of price competitors, eliminate many producer-dealers, and discourage the margin-shaving impact as a downward pricing factor.

2. Perceived access to the market could be improved by requiring that dealer offer to buy a certain percentage of their volume from the Board at the prevailing price, as a condition of their license. Those seeking access could declare product available to the Board for sale. There would be no price guarantees of any kind, and if the Board has no product to offer, the dealer would be freed of obligation.

3. Perceived grading manipulation by processors could be alleviated by providing Board personnel to monitor grading, and authority to call for independant regrading without direct producer involvement.

4. Requiring that a dealer market only with a broker, or wholesaler licensed by the Board, as a condition of his license, would permit some extension of Board authorities into other jurisdictions. This could probably work satisfactorily in Canada, but not outside the country. For example, the posting of a bond by all dealers may be a condition of a licence, or compliance with certain branding, or packaging requirement, or participation in promotional efforts, or avoiding certain unethical practises, etc...

5. The required giving of notice to the Board on all future delivery contract arrangements could be a condition of licences to ensure provision of back-up grading services to prevent abuse. The dealer should pay for grading calls. In conjunction with the previous measure, a Montreal, or Toronto, dealer, who was found to be abusing the grading call provision, could lose his P.E.I. licence.

6. The involvement of dealers in product promotion measures, and taxing them to generate additional resources for this purpose, is also within the Board's current competence. A comprehensive promotion program, based on a market study by specialists, would be required first.

7. The development of premium grades, and associated branding, could also be carried out through aggressive programs. Collaboration with dealers could also be dictated through modifying the dealer franchise. Support for Potatoes Canada could be dictated in the same way. Such moves should flow from a market study.

5.1.3. Using Futures Markets

The closing of the Chicago Futures Trading Program for Potatoes ends this approach as a potential option for producers. The experience of producers and dealers with U.S. Futures' delivery contracts has been unsatisfactory.

However, Future delivery contracts in the Dutch style, whereby producers are offered a variety of alternatives in their marketing arrangement, appear worthy of exploration. The Board would have to take the initiative in exploring how such arrangements could be structured in Canada, e.g. corporate marketing arm offering pooling arrangements. The Board would also need to put in place safeguards to prevent dealers from using the claim mechanism to escape contracts. Producers and local dealers would also have to take measures to assure superior quality for products delivered under such arrangements.

This approach would be worthy of exploration, if the Board were so inclined. Dealer franchises might be modified to encourage the use of such an option in sales arrangements with producers, or the Board might undertake to offer such an option, as above indicated.

5.2. TRI-PARTITE INCOME STABILIZATION

This program involving payments into a National Income Assurance Fund, financed equally by both levels of government and producers, has been considered a potential solution to producer income instability in the potato industry. Such a program has been introduced after many years of negotiation in the beef and pork industries. However, no payments have been made under these programs since their inception.

This type of program has a number of problems associated with it:

1. Governments (particularly provincial) are reluctant to undertake the unlimited and indeterminate charges on future resources, which such a program constitutes. They are very difficult to negotiate.

2. Such programs could offer guaranteed prices which some producers consider incentives to production. This could generate continuing surplus conditions. The guaranteed price becomes a ceiling.

3. To avoid this, support levels are often set so low, that real income protection for the mass of producers is abandoned, and becomes disaster relief.

4. This program often raises the issue of compulsory industry participation, so that producers opting in must stay with the program for a period of years.

5. Some provinces would like to use such programs as a basis for creating production incentives, i.e. top loading. The elimination of such programs was a condition of federal participation in the Red Meat Stabilization Program. A satisfactory arrangement can take many years to negotiate.

6. Such programs can prove too expensive to sustain, raising premiums beyond what producers feel they can afford. The Quebec program may be a case in point. The prospect of continuing high levels of supplies mentioned earlier speaks to this problem.

7. U.S. and other producers could be quick to cite such programs as industry subsidization, and demand countervailing duties, or trade restraints.

Discussions with A.E. Proulx, of the Agricultural Stabilization Board, Agriculture Canada, indicated that the Department does not believe that potatoes are an appropriate product for income assurance protection. Their position is that products with a swing in gross income of no more than 3% around an average are acceptable for such programs. For potatoes, their experience is that there are swings of up to 9%. It is felt the premiums to protect against changes of such a magnitude would be prohibitive, and that such reserves could be easily exhausted on a short-term basis, with potato crop income volatility. The experience in Quebec bears out this observation.

The above does not mean that a political decision to implement a tri-partite program is not conceivable. It does mean that officials would discourage the federal minister. The very substantial provincial cost, in a province like P.E.I., would likely not prove attractive, as well. With a 100 million dollar P.E.I. potato crop, the province could be responsible for an annual contribution of $3 million.

The interest of the federal government, and some provincial governments, in supply management, is precisely because they wish to avoid the income support cost in maintaining, and encouraging agriculture. The current situation of grain producers, and the enormous treasure being called for to save a basic Canadian industry like grain production from damage caused by misguided E.E.C. and U.S. policies, does not make a case for support programs for potatoes easier.

P.E.I. producers obviously labor under a serious competitive disadvantage relative to Quebec producer benefitting from their Provincial Income Assurance Program. If no market system changes occur, there is no reason they should not press for similar measures.

5.3. NATIONAL SUPPLY MANAGEMENT APPROACHES

5.3.1. Existing Models

The supply management solution to the income distribution problem for potatoes has been discussed seriously, since success in the poultry industry proved a producer managed supply control program could work.

The federal programs for dairy products and grain also aim to manage supply, the former through production controls, the latter through marketing quota. The dairy products model, analagous to eggs insofar as it deals with a continuously producing plant, was created by the Federal Government to provide a mechanism for major industry adjustment. Producer numbers gave it political priority. This does not apply to potatoes. The grains model provides for orderly marketing. The overwhelming dependance on the world market dictated minimal intervention despite a high political profile, and limits its relevance to potatoes where producers seek "relief" from world prices. However, the annual crop element dictates a relevance of marketing quota for any potato program.

It is these government prototypes which the N.F.U. proponents have found so attractive, apparently, because they eliminate an inherent conflict of interest associated with producer-managed Boards. These supporters fail to appreciate the danger inherent in a politicisation of normal market functioning which was so evident, and wasteful, in the functioning of the dairy program. The Wheat Board has functioned well, because it was essentially a one-desk selling operation in a world where Canada was only one of a group of important sellers. Although not seriously interfered with in Canada, government market interference in other countries has finally brought this successful operation to its knees.

The National Egg Plan is the world's only fully developed supply management producer plan. It has the following elements:

1. Full cost-of-production (administered) pricing based on arms length cost determination.

2. A functioning open market system, which allocates most product within an established price structure.

3. A surplus removal system financed by levies drawn from the marketplace (for domestic product use and traditional exports).

4. Domestic production quotas, combined with import quotas, supported by both national and provincial production control systems.

5. A demand development program domestically, and abroad, financed by both the marketplace and producers, to compensate for somewhat higher prices.

6. Significant government oversight in the operation of the program.

The programs for chicken and turkey, while they involve production quotas and import quotas, associated with cost of production measures, must rely on the accurate projection of demand, not only nationally, but regionally to maintain prices. Since there is no surplus removal, this is a very difficult task. Pricing can vary widely from cost-of-production objectives. The price results are at best approximations. Demand development and exports are minor considerations. Government, like producers, can only guess at the proper volume objectives.

All these products differ significantly from potatoes, in that they involve multiple cropping. Eggs are continuously marketed. Broilers are marketed in up to 5 cycles per year, with turkeys offering two crops each year. For Canadian producers, current technology and varieties provide only one crop per year, producing the typical glut of the harvest period. This situation, however, is no different than the grain situation, which is dealt with through marketing quota.

The potato is not unique in facing multiple product outlets. Both egg, chicken, and increasingly turkey, face this situation, as do dairy products. These can be responded to by providing separate quota regimes, and separate cost-of-production calculations.

Among these commodities potatoes differ (aside from grain) in the importance of exports, both in natural, and processed form. These exports are particularly important for P.E.I. and New Brunswick, but other provinces, like Manitoba and Alberta, are also concerned about export outlets. Dealing successfully with this situation will require ingenuity, and marketing skill. Critics should be reminded that Canadian producers were condemned for dumping, even with the current open market system. If this is possible, the presence of producer-operated multi-price marketing systems will not radically change this situation. If sufficient care is taken to avoid the finding of injury which is required under U.S. law, U.S. producer opposition can be dealt with as it was for eggs. Such systems are permissible under G.A.T.T., and are basic to the E.E.C. agricultural policy.

5.3.2. Current Supply Management Proposals

The proposal currently under consideration was been developed by representatives from most of the provinces within a framework provided by the Canadian Horticultural Council. Nine provinces are represented on the National Potato Agency Task Force. A major change relative to past efforts is a commitment by the parties to consider supply management as part of the proposed program.

The program, as outlined, consists of:

1. The regulation of potatoes and potato products;

2. A regulated area encompassing all provinces and Territories. Those not participating would be classed as unregulated;

3. A federal-provincial agreement among the parties relative to federal-provincial legislation, and cross delegations to dovetail the federal and provincial authorities in the two jurisdictions;

4. The delegation to the national agency of all the authorities available under the Federal Farm Products Marketing Act, and specifically the authorities necessary to operate a supply management system.

5. The pre-season allocation of marketing quota by regulated area (based on a 5 year average of production/marketings), as applied proportionately against an annually-determined supply target. This is to be modified at least by the end of five years by a comparative advantage-based formula to be applied to growth, or declines, in market demand.

6. The agency would ensure:

    a) Dovetailed regulations regarding quota administration. This includes provincial obligations to:

        i. monitor, and enforce quota allocations;

ii. post performance bonds at the producer and provincial lebel to support authorized marketings;

iii. the acceptance of independant monitoring of provincial quota control, and marketing performance;

iv. signatures on National Farm Product Marketing Council prior-approved contractual agreements providing, among other things, for the above.

b) Allowance for adjusted interprovincial marketing authorizations of available product to cover any regional shortages;

c) Licensing to encourage regulatory compliance;

d) Surplus removal for within-quota product;

e) The monitoring, and issuance of approved interprovincial marketing quota for product from unregulated areas, based on historical trade;

f) The approval of provincial programs related to extra-quota product;

g) Dovetailed levy powers and collections for national and provincial programs to cover operation, surplus removal, promotion, and research;

7. Provincially-administered:

   a) Pricing to achieve nationally-determined cost of production plus a reasonable return for non-processing product, and negotiated pre-season processing contracts which would apply to all processing purchases, whether contracted, or not;

   b) Quota administration through delegation of national authorities.

8. The Agency board would be made up of regulated area representatives, and two federal appointees, but a two-thirds majority of directors and market allocation would be required to carry a vote. The Board would establish at least four Advisory Committees to deal with:
   a) policy;
   b) industry;
   c) marketing, and;
   d) unregulated area liaison.

5.3.3. Comments on Proposals

The drafters have learned a great deal about supply management from earlier experiences with this mechanism, and many important elements required for an effective system are included. In its present form, it has attracted a great deal of anxiety and opposition, on the one hand, for incompleteness,and, on the other hand, for the radical shift in market power to producers which it would realize. Many of the important elements not discussed will finally have to be negotiated by the parties, should producers agree to proceed with the establishment of a supply management system.

Some of the important issues are the following:

1. Quota Allocation

   a) As described, the determination involved the direct application of simple mathematics to (one expects) official federal government data. Marketing data is available beginning only in 1985. Presumably, production data will be used. There would need to be formal agreement on the data base. Some jurisdictions are unhappy about the result of the mathematics, insofar as their share, and wish to negotiate improved shares as the price of their participation. One way to deal with this is to allocate a percentage (i.e. 5%) of over-quota for development purposes, if the governments in question are willing to underwrite the disposable cost. Another would be to reject any alteration as destructive of the possibility of agreement. However, those choosing unregulated status should have to surrender their potential share of growth in the regulated area, and, of course, face unregulated sales in their jurisdiction.

   b) The proposal speaks only to undifferentiated provincial quota. Costs may differ significantly by type of product, i.e. seed versus table. One quota and average price figure could discourage the pursuit of quality and, damage the industry.

   c) The provision for quota allocations could apply as well to potato products. In any event, even if quotas are not allocated, such products would have to be regulated, and import quotas would need to be imposed. In spite of claims to the contrary, direct processed egg products are a regulated product. As with fresh product, such quotas would have to be negotiated with the U.S. Exports would continue to be subject to open market conditions, except for intra-company shipments which may account for a significant part of such movement. With processing included, specific adjustment provisions would be required, if product exports are to be maintained.

d) There is no provision for orderly marketing of regulated product. The national agency could find itself burdened with all production at harvest time, as producers seek to convert their potatoes to cash, at the established price, at the earliest possible moment at the established price.

2. Pricing

a) The proposal envisages pricing based on cost of production, plus a reasonable return, as administered by provincial boards. Administration by Board could permit pricing above the formula price. This, in turn, could generate extra surplus, which the Agency would be responsible for. This could be profitable for a province's producers, even if the Agency paid only the formula price. It could also attract the movement of product from other areas, which would raise surplus removal costs.

On the other hand, The price differentials created by local Board price determination could also be used to prevent product entry, based on traditional movement. Such a strategy could be used by a province seeking a larger share of the provincial market, i.e. Quebec in conjunction with its insurance program.

b) Aside from processing potatoes, there is no provision indicated for price differentiation. This could discourage producers seeking to maintain quality for particular uses, i.e. seed, which would not be provided for in an average price.

c) Some mechanism to ensure orderly marketing will be required. Producers will have to be issued marketing allocation against their quota on a periodic basis. This could be expedited to meet particular market needs. People who store product face additional costs as a consequence of holding product off the market. Consideration of time differentials may be necessary to ensure orderly marketing, and price maintenance. If administered prices are not to be undermined, producers must be allowed to market minimum amounts of product on an orderly basis.

d) Finally, cost of production plus a reasonable return in each province may not necessarily provide a satisfactory pricing structure to permit the free movement of product in the marketplace. The pricing structure emerging from cost figures may have to be modified, for this to occur, or the Agency would be continually intervening to avoid shortage. One man's shortage situation is another man's normal market. This could create great conflict.

A price structure to ensure movement appears to be necessary. The national Agency may need to use its levying power to tax away windfall gains to maintain equity among producers. This is another reason for vesting price determination solely in the national Agency's hands. Divided jurisdiction does not work.

e) There is no mechanism provided for dealing with price differentials, which are likely to arise relative to export markets. This could prevent the free movement of product to export. This product would accumulate as surplus. A surplus removal mechanism is required to permit to continue orderly movement of product to export markets.

3. Surplus Removal

a) The provincial allocation of quota and quota administration is carefully hedged in the proposal by safeguards designed to encourage proper provincial administration. There is no mention, however, of requirements and conditions for national Agency acceptance of surplus removal product, subject to provisions as:

- notification;
- delivery to an acceptable location;
- federal government regrading;
- delivery in acceptable form, i.e. bulk? bagged? etc.;
- required differentation to prevent re-sale, etc.

b) The program hints at the presence of non-quota product. The mere presence of such product creates a market effect and a control problem, encouraging producer non-compliance. This would directly impact any surplus removal program. Owing to the market effect, this could create costs far beyond those anticipated in calculating a performance bond. In any case, bonds may be collectable only after a very extended period, so that short term cash flow, and financing costs must be minimized. Some mechanism is required to deal with yield variability, hich means some version of the production sleeve will be required. This may involve production controls as well as marketing considerations in the quota.

4. Costs of Production

There is no definition in the proposal of this aspect of the Plan. Obviously, this is to be a subject of study and negotiation among the parties and the National Farm Products Marketing Council. In addition, the work must be done, in advance of any pricing program implementation. It is obvious that pricing on such a basis cannot be done until such work is completed on a priority basis. This will take time, and be very costly. It is the first order of business of any new Board. Definition of the average industry scale, or unit, would be a crucial, and sensitive part of this task. Owner labor returns and rates of return on equity would also be controversial.

5.3.4. Necessary Elements for an Effective Supply Management Program for Potatoes

1. Regulated Product

    1. It appears likely that separate quotas would be required for seed, table, and processing potatoes, based on evaluated costs, and to retain incentives for specific quality measures.

    2. The question of potato products is important. The relationship with fresh product is so direct, that excluding them from a supply management regime would

indeed force their exclusion from a supply management system in the fresh state. For exported product, processors could easily be provided with cost remissions to ensure competitiveness of Canadian operations. But this does not mean producers of processing potatoes could not be assured cost-of-production pricing, borne by Canadian pricing of these products.

3. The regulated unit at the provincial level would have to be kept quite low, probably no higher than 5 acres. Agreement would be necessary on a national basis to avoid exploding production of unregulated product.

4. A system could be satisfactorily implemented which included only the major producing provinces from Ontario East. While Manitoba's inclusion would be desirable, it is not crucial. Arrangements could be made to deal with the potential processing problem, and Manitoba would come in later to share a growing table market.

2. Pricing

Pricing would be devised using a market price structure, founded on a cost of production base. This structure would be the sole determinant for domestic prices, maintained by Board purchase at these established prices. Modified to allow for usage, time, and distance differentials, Canadian pricing would be separated from current world market pricing. Cost studies, conducted at arms length to ensure acceptability, would require regular updating. Parameters would be necessary to permit interim adjustments, and the translation of costs to prices, i.e. delivered price basis bul,, or bagged, etc., included Board's operating cost. To avoid operating below cost the price should contain provision for board administration, product advertising, and the estimated cost of historic product disposition, including export. This is justified, because the presence of this volume increases scale, and reduces the level of unit cost to the consumer. A return on investment for producer equity would have to be negotiated, as well as a management wage for the owner's labor.

Fresh potato products for the table market would have to be priced on an annual basis, with market differentials to permit normal trade movement. These marketing margins would be established, based on existing market precedent. Prices in all major markets would have to be established as elements in an overall a Canadian market price structure. This would be supported by surplus removal programs operating at a primary handling level to keep to a minimum legislated intermediary margins. Established market prices could be altered during the year to take into account the cost of storage and storage losses. Prices would have to be based on top quality product only to retain producer incentives to maintain quality.

3. Product Removal and Control

Disposal programs would likely have to operate in conjunction with orderly periodic marketing quotas available to all producers. These periodic quotas could be modified on a province by province basis in relation to the apparent demand situation. The existing dealer system could act for the provincial and national boards to meet the need for a surplus disposal infrastructure. Competition and consolidation among dealers in such a structured environment could quickly lead to shaved margins, and premiums on producer prices, as dealers compete to handle product in a regulated system. With risk removed revenue depends on volume.

If dealer cooperation and reliability were not available, provincial boards would have to establish a network of depots for this same purpose. The former would obviously be more desirable, and is the most likely. Provincial producer boards would act as agents in these matters. They would have to be able to resist producer pressure to accept poor product. All declared product would have to be graded, or regraded. A Board accepting poor quality product from their producers, could find it refused by the National Board.

Marketable product, based on allocated marketing quotas, would, particularly in the Maritimes, be far in excess of local, and even domestic, usage. Domestic pricing is likely to be higher than that available in the export market. They would likely have to be surplus declared on a regular basis. This product would have to be auctioned off on a weekly basis solely for export purposes. Dealers would have to document, within a fixed time limit, the movement beyond our borders of product equivalent to these purchased, or be billed, for the differential between the established and the auction price. U.S. dealers would have to be permitted to bid to keep the process honest, and as competitive as possible. A small differential might be necessary to allow room for local dealer margins.

Dealers could continue to deal with regular suppliers, as long as the price was at/or above the established price. He could, thus, ensure the continued supply to quality specifications, at least for domestic use.

Domestic requirements from surplus purchases, i.e. regional shortages, would require a price equal to the local established price.

Those with the highest quality product would be least likely to have to seek the surplus disposal route, except in the case of export trade. Surplus product could be offered in lots identified as to source, so that exporters could bid for preferred product. Different classes of surplus could be established to retain an incentive toward high quality. This approach could become an export marketing tool. Producer-dealers with markets abroad would have an incentive to market their product through the surplus system. The difference between purchase and sale price, at the provincial level, would be claimed from the national board, which receives collected levy monies.

A similar, and separate, apparatus would be required for seed potatoes. If international prices are below cost, then substantial amounts of product in P.E.I. and N.B. would be marketed through auction channels. If larger markets are available, regular delivery quotas could be adjusted to meet the need.

For both seed and table potatoes, auction product sold below established prices would have to be accounted for by shipping documents, or additional charges would be assessed. Those who were caught abusing the system could lose their export licence and the right to participate in auctions. Excess seed product could be disposed of in table auctions, if necessary.

Processing quota would also have to be separately accounted for. All product would be delivered based on a cost-determined price (including levy), with negotiated incentives for desired qualities, and premiums for longer delivery times to encourage desired handling, and the cost and losses of proper storage. Processors could be entitled to negotiated rebates, based on documented product exports on a continuing basis. Local Boards could participate in the grading process, calling for re-inspection, if considered necessary.

Non-quota, or "sleeve production" the result of higher than expected yields, could only be marketed through the Board, and on a unsupported non-quota basis. Any non-quota plantings identified would have to be plowed under. Provinces would face penalties drawn from posted bonds for any product in excess of permitted marketing quota, including "sleeve" production not marketed through the Board. All dealers would have an obligation to regularly report to the National Agency as, with provincial collaboration, a condition of their license. Product from unregulated areas would be controlled through the dealer licencing. Those abusing the regulations could lose their dealer licence. Levy would be collected on all such product by/from the dealer.

Both national and provivincial monitoring staff would be organized to carry out a continuing audit program of plantings, harvesting, storages, and sales.

4. The Role of the Local Board

Local Boards would play key roles in a national supply management program:

- They would be responsible for quota administration and control.

- They would have to deal with all the local political problems, associated with this key feature.

- They would be responsible for local surplus administration and disposal, in accordance with national guidelines consistent across the country.
- They would bear a financial responsibility for compliance with quota and surplus disposal regulations, and enforcement.

- They would be responsible for local surplus administration and disposal, in accordance with national guidelines consistent accross the country.
- They would bear a financial responsibility for compliance with quota and surplus disposal regulations, and enforcement.

- They may be required to take necessary legal action to ensure enforcement, and avoid penalties.

- They will collect all levies, and remit national levies.

- They will have to meet all the requirements of local administration, which would continue to include such things as seed programs, and brand identity and advertising, local dealer and producer licensing, advance payment programs, disease eradication, variety development, etc...

Many of these tasks relate to provincial jurisdiction, and are beyond the powers of the national board. Contractual arrangements which spell out provincial and national board tasks, responsibilities, and commitments would have to be negotiated as part of plan signature.

5. The Role of the National Board

The national board, made up of provincial board delegates and federal appointee(s) would be responsible for administering and monitoring quota allocation to provinces by product type, for interprovincial and export trade.

- The Agency would ensure the development and establishment of a cost-of-production basis for pricing (national studies by professionals), and pricing differentials, to permit, and ensure, free interprovincial product movement.

- The Agency would negotiate the terms of the plan, and its national administration with the National Farm Products Marketing Council.

- The Agency would implement with a surplus removal apparatus, would provide for import quotas for potatoes and related product.

- It would negotiate, and monitor, import quotas.

- It would develop, and implement, plan regulations and orders.

- It would develop, and assign, staff to the administration of the national Agency.

- It would implement, and monitor, the pricing structure.

- It would determine national levies, and administer their expenditure.

- It would defend the elements and integrity of the National Marketing Plan.

- It would negotiate with participants in the system.

- It would ensure the functioning of consultative committees.

It is apparent that pricing could not be initiated until some time after the Agency is established. Agreements would have to be formulated, and signed, administration established, national monitoring teams trained and deployed, regulations formulated, approved, and implemented, promotion and research priorities established, reducing culls and waste, seeking new products, varieties, encouraging consumption, supporting export penetration, etc. Necessary legal action taken, negotiations carried out with unregulated areas, etc. All these things would have to be done before producers saw any concrete benefits from the establishment of the Plan.

The national Agency requires sufficient authority to ensure a level playing field is maintained among member provinces. Since the Board has no party to speak for this national Agency need, it will have to be agreed to beforehand, and insisted on by the Federal Minister. The system will not function effectively without the national Agency being in a position to assure equity to all. This speaks to the requirement, among others, of:

1. Assured delegation of provincial powers to Agency monitors, including right to enter, examine, seize and dispose.
2. Assured right to audit both the provincial board and provincial industry participants.
3. Assured right to refuse surplus removal in the face of non-compliance, with National Board specifications.
4. The obligation of provincial boards to provide for the automatic posting of new performance bond, when bonds are drawn.
5. The obligation of provincial board to remit levies collected in the name of the national Agency.

6. Unregulated Areas

Provinces or Territories may have an incentive to seek unregulated status, because can they benefit from the presence of the national Agency without bearing any costs. Obviously, product entering the regulated areas would be subject to levy charges. But this would not recapture the benefits associated with expanded production in a sheltered environment resulting from import controls. The national Agency would be entitled to ensure that it can extract as many as possible of the potential benefits of a national system from such areas to minimize such opportunism.

7. Consultative Committees and Other Board Committees

The function of the consultative committees is to ensure the involvement of important stakeholders in the system. While difficult to make functional, they can serve as mechanisms to defuse conflict. Very often, however, participants are opposed in principle to the existence of supply management, and do not participate in good faith. The committees require great commitment and skill on the part of staff to make functional.

Other committees will prove to be necessary including; one for cost of promotion, and another for advertising and promotion. This latter may be included in the market consultative committee, and deal with market development in the widest sense. There will be a need for

internal committees, like an executive committee, which could function at the same time as an audit committee owing to its importance.

8. Management

This subject is the great unmentionable. The demands on management will be great, both at the national, and at the provincial level. Particularly at the national level, in the early stages, there will be no substitute for impartial professional management to develop the operating frame of reference.

5.4. PROPOSALS EVALUATION

Adaptability of proposals to the P.E.I. situation.

5.4.1. Improvement in the Current System

1. Changes in Marketing Board Authorities or Regulations

Such a development could be key to the pursuit of improved shares of market proceeds for producers within the current system. However, historical precedent indicates that, under existing legislation, any recommendations by the Royal Commission to the industry and the Board, are unlikely to result in substantive changes at, either, the board, or industry, level.

If changes in legislation can be contemplated to implement a key measure, a shift in the Board structure separating dealers from producers, some of the suggestions could be realised. Such a move would liberate producers, who feel intimidated by dealer presence, to pursue the producer interest. A producer Board, with a legislated Dealer Advisory Committee, would be a preferred model under amended (Natural Products Act) legislation permitting supply management powers (Section 19). (See Section on suggested amendments.) This could be justified by the provincial government as a necessary preparation to permit a possible National Supply Management System.

Such a move, with the Board supported by the provision of supplemental management resources, would clear the way for many of the indicated measures, including a corporate marketing arm, if the will existed to improve the producers' bargaining power in the marketplace.

The adaptation of provisions aimed at improving the system beyond P.E.I. Borders, while theoretically beyond the capacity of provincial institutions, could be engineered by making the dealings of P.E.I. companies' licences conditional on their dealing only product with buyers who hold a valid licence issued by the P.E.I. Board.

Even a loose collaboration between existing boards would improve the producers' situation. The system would be vulnerable to disruption from New Brunswick, and would function with greater security, if that Agency implemented stronger powers. Nevertheless, a great deal could be accomplished with a strong P.E.I. Board, given its dominance in the Canadian table market.

The important question remains as to whether the government of P.E.I. is prepared to change the nature of its current relationship with the Potato Board, and impose a change in orientation. This would involve a change in the legislation governing the Board, and a more active collaboration.

2. Amending Dealer Franchises

This measure is probably within the competence of the Board, under its current authorities. It is clear that such an approach is unlikely, with the present Board structure. It does not seem feasible without a Board prepared to deal aggessively with the trade. In some measure, it is therefore not a viable alternative without some of the more radical changes in legal structure, indicated in the previous section. The recent reported halt, called by Agriculture Canada to P.E.I. shipments owing to excess mud in bags, may indicate such Board moves are overdue. However, no manager, even if he were charged with implementing changes in dealer franchises, would survive with the current structure.

3. Futures Markets and Contracts

The example of the Dutch marketing structure, with shared market risk between producers and dealer, and enforced measures to prevent the subversion of future delivery contracts, would yield a significant improvement over current market arrangements. While hedging through Futures markets is no longer available, even if it had been a useful tool, the future delivery contract offers potentiality, particularly for producers willing to share risks with dealers.

5.4.2. Tri-partite Income Stabilization

There is no reason P.E.I. producers should not press for the implementation of such a program in the absence of substantive market system changes. They will continue to be under a competitive disadvantage vis-a-vis Quebec producers as long as the Quebec program continues. However, the prognosis for the realization and usefulness of this approach does not appear promising.

5.4.3. National Supply Management Approaches

There is no reason such a program could not be implemented in P.E.I., as it has already been done in the poultry industry. Obviously, an amended Natural Products

Marketing Act would have to be implemented. By its very nature, such a program would bypass dealer opposition, and based on the national program, assure growers their cost-of-production. In many ways, from the P.E.I. government's point of view, such a result would be the easiest to implement politically.

The P.E.I. government already has an infrastructure in place to supervise marketing boards. The establishment of the Potato Board would add substantially to its task.

For the Potato Board, the task of balancing producer and dealer interests would become even more difficult. There would continue to be some inherent conflict between its role as a producer institution, and its need to regulate dealers. In other commodity instances, in these situations, board regulations work to safeguard dealer margins, and minimize dealer consolidation. Since the producer price will be dictated, and the delivered price will have to fit into a national price structure, dealer margins will always be a subject of controversy with the national Agency, which will be under pressure from the National Farm Products Marketing Council.

Similar conflicts will arise as the local board attempts to protect local dealers from national Agency specifications on surplus removal. The local board would also be likely to favor local dealers over outside buyers invited to bid by the national Agency. Many of these conflicts would not arise with a producer-oriented Board.

A resolution would be required as to the role of provincial branding. An identity in conjunction with a Canadian symbolism, will likely be the formula. Provinces will still have to make decisions regarding the promotion of their product, if they wish to see a buoyant auction demand for export markets. The system would not long sustain an absence of eager markets for P.E.I. product.

Lobbying would continue to be required to insure the protection of P.E.I. interest in transport, varietal development and research, disease eradication, etc. The role of Potatoes Canada would be either strenghtened, or it would be replaced by the national Agency. There would be a shift to calling on Agency resources for development efforts instead of government.

The provincial board's major task would be pursuing the province's interests at the national board level. P.E.I. will have substantial voting power to use in negotiating trade-offs to resolve the conflicting demands of provinces at the national level. Management skills will be crucial to protecting P.E.I. interests.

In the same way, the operation of product disposal activities in P.E.I. would be a major task, unmatched in any other province. Close liaison and collaboration with the national body, and an effective administration of a large business operation at the provincial level, will add additional costs and management requirement. Moving the island's largest crop will continue to be a challenging marketing task, and a substantial portion of the challenge would be in the Board's hands. The demands on the Board's administrative infrastructure and accounting need will multiply many times. The current approach and management resources would be unable to cope with the requirements.

ANNEX I.

ANNEX I-A ASSIGNMENT METHODOLOGY

ANNEX I-B PERSONS INTERVIEWED

ANNEX I.

This study and analysis has been conducted in accordance with Terms of Reference prepared by the staff of the P.E.I. Royal Commission on the Potato Industry. This served as the basis for the attached work plan, which was implemented.

I-1. OBJECTIVES

I-1.1. To determine the competitiveness, efficiency, effectiveness and equity of existing marketing practises in the P.E.I. potato industry.

I-I.2. To determine the validity of specific criticisms aimed at the existing potato marketing system of P.E.I.

I-1.3. To determine the efficiency, effectiveness, equity, and appropriateness of potential alternative marketing and price stabilization systems.

I-2. SCOPE OF WORK

OBJECTIVE 1.

I-2.1. Carry out an analysis of the current potato marketing system.

I-2.1.1. Examine the regulations, rules and procedures governing the existing marketing in P.E.I. system

I-2.1.2. Evaluate the efficiency and effectiveness of the P.E.I. Potato Marketing Board, including:

I-2.1.2.1. Marketing strategies
I-2.1.2.2. Competence of marketers
I-2.1.2.3. Resources employed

I-2.1.3. Study the roles of intermediairies, including:

I-2.1.3.1. Dealers
I-2.1.3.2. Brokers
I-2.1.3.3. Retailers
I-2.1.3.4. Exporters

I-2.1.4. Study the use of the future's markets

I-2.1.5. Examine the Distribution of revenues and profits within the industry.

I-2.2. Carry out an analysis of the potato processing market for P.E.I. potatoes

I-2.2.1. Study processing sector market arrangements, including:

I-2.2.1.1. Contract arrangements between buyers and sellers

I-2.2.1.2. The price determination system

I-2.2.2. Study processing market sector parameters, including:

I-2.2.2.1. Market share
I-2.2.2.2. Potential growth
I-2.2.2.3. Financial stability
I-2.2.2.4. Alternate uses for potatoes

I-2.3. Carry out an analysis of the structuring of business relationships within the industry among market participants, including growers, dealers, processors, brokers, retailers, and exporters, including:

I-2.3.1. Types of agreements

I-2.3.2. Payment schemes or arrangements

I-2.3.3. Market services provided in addition to buying and selling

I-2.3.4. Style of doing business (formal/informal, etc.)

I-2.4. Develop a comparative profile of the Canadian, American and Netherlands potato industries (information on Polish competition may be useful as well), including among other elements, an analysis of

I-2.4.1. Production

I-2.4.2. Market sharing

I-2.4.3. Markets served

I-2.4.4. Marketing structures

I-2.4.5. Marketing strategies

I-2.5. Carry out an analysis of potato quality as a market factor, including, among other elements, an analysis of

I-2.5.1. Expectations of the market

I-2.5.2. Comparative P.E.I. potato quality vs competitive product

I-2.5.3. Potential product quality improvement measures and associated cost

I-2.6. Analysis of socio-economic and political environment affecting potato marketing, including an analysis of

I-2.6.1. Consumer behaviour

I-2.6.2. G.A.T.T.

I-2.6.3. Free trade discussions

I-2.6.4. American protectionism

I-2.6.5. E.E.C. agricultural policies

I-2.6.6. Producer/governments views in other provinces relative to potato marketing

OBJECTIVE 2.

To examine and determine the validity of specific criticisms aimed at the existing potato marketing system on P.E.I.

I-2.7. To carry out a comprehensive analysis of specific criticisms, including:

I-2.7.1. Evidence of price undercutting

I-2.7.2. Evidence of favoritism in access to market opportunities

I-2.7.3. Relative profit (loss) margins to producers, dealers, brokers, exporters, retailers

I-2.7.4. Evidence of price manipulation and control of prices determination

I-2.7.5. An examination of trading practises at the Ontario food terminal

I-2.7.6. In assessment of the impact of the relative number of dealers compared to the number of producers and brokers active in the potato market

I-2.7.7. Farm gate/consumer price spread for P.E.I. potatoes vs. potatoes grown in other areas

OBJECTIVE 3.

To determine the efficiency, effectiveness, equity and appropriateness of potential alternative marketing and price stabilization systems.

I-2.8. Carry out an analysis of alternate arrangements to the existing market systems, including supply management, two-tiered supply management, tri-partite stabilization plans, single desk selling, advance contracting, franchising, etc., so as to examine:

I-2.8.1. The mechanics of each system

I-2.8.2. The possible economic impact of each system

I-2.8.3. The projected distribution of revenue and profits under each system

I-2.8.4. The experience with the system in other commodity sectors

I-2.8.5. Strengths and weaknesses

I-2.8.6. Applicability to the P.E.I. potato industry

I-2.9. Prepare study report

I-2.9.1. Develop conclusions of study

I-2.9.2. Develop recommendations of study

I-2.9.3. Prepare and submit a report on the study

I-2.9.3.1. Prepare draft
I-2.9.3.2. Submit draft for discussion
I-2.9.3.3. Review draft
I-2.9.3.4. Prepare final report
I-2.9.3.5. Submit final report

I-3.0. IMPLEMENTATION OF STUDY

I-3.1. Key Elements in Methodology

The key elements in this study, forming the basis of study methodology were:

I-3.1.1. The use of the International Network of Consulting Capability and Contacts in the Peat Marwick organization. We have drawn on the direct knowledge of Mr. James Evans, partner in charge of Peat Marwick's agrifood consulting practise in the U.S. and Mr. Leslie Zurick, partner, in the firm's London office. The latter with extensive food industry experience in Europe, and indirect contact with firm offices on the continent, and specifically in The Hague and Brussels, have, together with Mr. Evans, provided the foreign inputs required.

I-3.1.2. The use of primary data sources, as well as secondary sources, through extensive interviewing of industry participants, for an in-depth evaluation and validation critiques of the industry, and to document participant roles and practises. Secondary data was available from the statistical services of U.S.D.A. accessible on line through major libraries, Statistics Canada, P.E.I. governments sources, and the E.E.C. statistical services.

I-3.1.3. In depth experience available within the project team provided access to much of the experience necessary to an in-depth probing of the industry in all its facets.

The cooperation and assistance of government, producers and the trade across the country was key to this work.

I-3.2. Project Phases

A three phase approach was adopted for this project in studying the issues raised: first a study of the P.E.I. situation, then an analysis of the Canadian and international context, and finally an analysis of the data, and the market organization alternatives and the preparation of the report. Close consultation was maintained with Commission staff, and the staff kept informed on study activities and progress.

I-3.2.1. In phase 1., appropriate questionnaires were designed to generate information inputs relative to study issues raised. Travel to Charlottetown, and meetings with Commission officials permitted discussion regarding the study and its objectives. Consultation was carried out with P.E.I. staff, and interviews implemented with local market participants, the Board, board officials, and a sample of local brokers, exporters, local dealers, and growers.

I-3.2.2. In phase 2., communication was realized with market participants, in Montreal and Toronto, as well as Ottawa, with major wholesalers, brokers, retailers, and government officials. The importance of potato quality as a factor was assessed with the trade in Canadian and foreign markets. Interviews were carried out with representatives of grower groups and provincial governments to assist in assessing the socio-economic and political environment affecting potato marketing. Contacts were implemented with Peat Marwick and Partners' offices in the U.S. and Europe to gather required study data.

I-3.2.3. In phase 3., an assessment of the data, was carried out, and a report of study findings prepared, conclusions and recommendations formulated, and preliminary and final reports submitted.

I-3.3. Work Plan

Step 1.

- Project initiation
- Preparation of industry questionnaires in consultation with industry specialist

- Meetings with Commission staff to confirm understanding of requirements, to confirm project schedule and agree on appropriate reporting

Step 2.

- Review of existing market information
- Review of legislation governing the industry, referenced reports, and background information on potato industry structured, varieties grown, price levels, historical developments
- Gathering of all locally available relevant data from the Commission particularly useful to Robin McAdam in carrying out data gathering tasks
- Draw up data summary

Step 3.

- Commission and government officials canvassed to identify candidates for interviews, and to respond to the range of questions appropriate to their positions and background, as identified by study terms of reference
- Data summary drawn up

Step 4.

- Board officials and staff interviewed.

Step 5.

- Trade and processing sector interviewed.

Step 6.

- Coincident with the above, Peat Marwick and Partners gathered data on comparative industry profiles between Canada and selected countries and the impact of international trade and agricultural policy initiatives in Canada, the U.S., and the E.E.C., studied.

Step 7.

- Wholesale/retail/trade/government in Montreal/Ottawa/Toronto were interviewed.

Step 8.

- A consolidation of the data inputs was carried out.

Step 9.

- Alternative systems of market organization and income distribution were evaluated.

Step 10.

- Conclusions and recommendations were developed for staff consideration.

Step 11.

- Draft report was prepared and submitted.

Step 12.

- For completion and submission of final report, Commission inputs were received.
- Monthly activity reports indicating study progress were submitted.

I-4.0. THE PROJECT TEAM

The project team combined the world-wide resources and technical capacity of Peat Marwick and Partners, with the specific experience and expertise of Roygold Marketing Systems Ltd.

ANNEX I-B - INDIVIDUALS INTERVIEWED AND/OR CONTRIBUTING

1. Fred DRISCOLL, Commissioner, P.E.I. Royal Commission on the Potato Industry.
2. Ivan McARTHUR, Manager, P.E.I. Royal Commission on the Potato Industry
3. Don ANDERSON, General Manager, P.E.I. Potato Marketing Board
4. Elmer MacDONALD, Chairman, P.E.I. Potato Marketing Board
5. Floyd McLEAN, Assistant General Manager, P.E.I. Potato Marketing Board.
6. Marion PARTRIDGE, Secretary-Treasurer, P.E.I. Potato Marketing Board
7. Gerry FOUGERE, Marketing and Transportation, P.E.I. Potato Markting Board
8. Roland MacDONALD, Advertising and Promotion, P.E.I. Potato Marketing Board
9. Allen PARKER, Elite Seed Farm, P.E.I. Potato Marketing Board
10. Ewen CAMPBELL, Elite Seed Growers Coordinator
11. T. CARROLL, Minister of Agriculture, Government of P.E.I.
12. Allison RAMSAY, Statistical Services, P.E.I., Department of Agriculture.
13. Dale DEWAR, Deputy Minister, P.E.I. Department of Agriculture
14. Ken MacKENZIE, Potato Marketing Coordinator, Marketing Branch, P.E.I. Department of Agriculture
15. J.P. HENDRICKEN, producer
16. Gordon CHING, Ching Bros., producer-dealer
17. Herman SMALLMAN, producer
18. Gordon McLOSKY, producer
19. Leo WOLCH, producer
20. Robert ROSE, producer
21. Elwood LAWTON, Lawton's Ltd.
22. Earl ADET, producer

23. John ROBINSON, Eric Robinson Inc.
24. Vernon CAMPBELL, producer
25. Mitchel MacLEAN, Island Shipping Ltd.
26. John VISSER, producer-dealer
27. Harry FRASER, Fraser's Report
28. Fulton HAMMIL, Hamill Ltd, producer-dealer
29. David LOGGIE, General Manager, P.E.I. Produce Ltd. (C.P.)
30. W.E. COUSINS, Cousins Ltd, producer-dealer
31. Bertram WEBSTER, President, P.E.I. Potato Producers Association
32. Bruce LINKLETTER, Linkletter Farms Ltd, producer-dealer
33. JohnMcKENNA, Sr. McKenna Bros.
34. Eugene MacLURE, Boyd MacDonald Inc.
35. Lloyd Palmer, Former Deputy Minister, P.E.I., Department of Agriculture
36. Wilfred NEWMAN, producer, Board member
37. Jacques MAILHOT, Secretary Manager, Quebec Potato Marketing Board
38. J.C. TESSIER, Horticultural Services, V.P.A.
39. Les ARMSTRONG, General Manager, Ontario Potato Marketing Board
40. John KUHL, General Manager, Manitoba Vegetable Marketing Board
41. Donald KROEKER, producer, Manitoba
42. Bill CHILDERHOSE, Saskatchewan Vegetable Growers Association
43. Bill VISSER, Alberta Potato Commission
44. Ralph TOWSLEY,Manager, B.C. Vegetable Marketing Commission
45. Jim HARRIS, Chairman, B.C. Vegetable Marketing Commission
46. Clifford MEEK, Nova Scotia Potato Marketing Board
47. Willem SCHRAGE, General Manager, N.B. Potato Agency
48. Don KEENAN, N.B. Potato Marketing Agency
49. Dale MacINTOSH, Chairman, N.B. Potato Marketing Agency
50. Steven WHITNEY, Canadian Horticultural Council
51. Ralph BARRIE, Chairman, National Farm Products Marketing Council
52. G. HISCOX, Marketing Boards, National Farm Products Marketing Council

53. Carola MacQUADE, National Farm Products Marketing Council
54. Glen FLATEN, Former Chairman, Potato Enquiry Panel
55. Geoff ADAMS, U.S. Trade Division, External Affairs, Government of Canada
56. Marion WILSON, Agricultural Products Division, External Affairs, Government of Canada
57. Wilfred BRADNOCK, Director, Seed Division, Plant Health/Products Directorate, Canada Department of Agriculture
58. Al PROULX, Agricultural Stabilization Programs, Canada Department of Agriculture
59. Peter BURRIS, Marketing Branch, Canada Department of Agriculture
60. Census Division staff, Statistics Canada
61. Tom HUGHES, President, McKay and Hughes, Gemini, Bradford
62. Fred WARD, President, F.W. Ward, Brokers, Montreal
63. Mel CAPLAN, Head Buyer, Steinberg, Ltd, Montreal
64. Pedro, Head Buyer, Havana Potato Corporation, New Jersey
65. Customer Brokerage Services, New York
66. Bruce COLLINGS, Bradbro Produce, Bradford
67. M. GHANEM, T. and E. Food Products, Ottawa
68. Ted GROENENWEGEN, Groenwagen Ltd, Toronto
69. Steve KEEGAN, Darrigo Bros., of Massachusetts
70. Ferdinand GOSSELIN, Patates Quebecoise, Quebec
71. DARRYL, Pollak's, Maine
72. Da Silva Bros., Boston, Massachussets
73. Spud Express, Boston, Massachuseets
74. Frank FILLIPPI, Miracle Food Mart, Toronto
75. Richard CONSTANTINOU, Pomexpan, Montreal
76. Brian SMITH, Chief Executive Officer, Potatoes Canada, Fredericton
77. Al KEZIS, Associate Professor, Chairman, Department of Agriculture and Resource Economics, University of Maine, at Orono
78. Ed JOHNSTON, Potato Extension, Specialist, University of Maine

79. F. W. ZECHNER, Potato Expert, Commercial Division, Canadian Embassy, The Hague, Netherlands
80. Arvin BJUDGE, Economics and Statistics Service, Crop Reporting Board, U.S. Department of Agriculture, Washington
81. Ivor BROWN, Potato Marketing Board, 50 Hans Crescent, Knightsbridge, London, England
82. Ralph DAVIDSON, grower, Shelburne, Ontario
83. Dorothy GOFFNER, Foreign Trade Division, Trade Information Section, United States Bureau of Census.

ANNEX II.

CANADA AGRICULTURAL PRODUCTS STANDARDS ACT

A-110

CANADA

OFFICE CONSOLIDATION

Canada Agricultural Products Standards Act

R.S., c. A-8

Fresh Fruit and Vegetable Regulations

C.R.C., c. 285

amended by

P.C. 1979-287
P.C. 1980-733
P.C. 1980-1675
P.C. 1981-474
✓P.C. 1981-1161

September 1981

CODIFICATION ADMINISTRATIVE

Loi sur les normes des produits agricoles du Canada

S.R., c. A-8

Règlement sur les fruits et les légumes frais

C.R.C., c. 285

modifié par

C.P. 1979-287
C.P. 1980-733
C.P. 1980-1675
C.P. 1981-474
C.P. 1981-1161

Septembre 1981

CHAPTER A-8

An Act to establish national standards for agricultural products and to regulate international and interprovincial trade in agricultural products

SHORT TITLE

Short title

1. This Act may be cited as the *Canada Agricultural Products Standards Act*. 1955, c. 27, s. 1.

INTERPRETATION

Definitions

2. In this Act

"agricultural product" «*produit*...»

"agricultural product" means livestock (including fur-bearing animals raised in captivity), eggs, poultry, milk, vegetables, fruit, honey and maple syrup, and products thereof, and leaf tobacco;

"analyst" «*analyste*»

"analyst" means an analyst designated for the purposes of the *Food and Drugs Act* or an analyst employed under the Government of Canada or the government of a province and having authority to make analyses for public purposes;

"grade" «*qualité*...»

"grade" includes standard;

"grade name" «*nom*...»

"grade name" includes any mark, description or designation of a grade;

"grader" «*préposé*...»

"grader" means a person appointed or designated as a grader pursuant to section 7;

"inspector" «*inspecteur*»

"inspector" means a person appointed or designated as an inspector pursuant to section 7;

"Minister" «*Ministre*»

"Minister" means the Minister of Agriculture;

"package" «*emballage*...»

"package" means an inner or outer receptacle or covering used for containing, packing, wrapping or covering an agricultural product;

"place" «*endroit*»

"place" includes any vehicle, vessel, railway car, or aircraft;

CHAPITRE A-8

Loi établissant des normes nationales pour les produits agricoles et réglementant le commerce international et interprovincial de ces produits

TITRE ABRÉGÉ

Titre abrégé

1. La présente loi peut être citée sous le titre: *Loi sur les normes des produits agricoles du Canada*. 1955, c. 27, art. 1.

INTERPRÉTATION

Définitions

2. Dans la présente loi

«analyste» "*analyst*"

«analyste» signifie un analyste désigné aux fins de la *Loi sur les aliments et drogues* ou un analyste employé sous l'autorité du gouvernement du Canada ou du gouvernement d'une province et ayant qualité pour faire des analyses à des fins publiques;

«emballage» ou «contenant» "*package*"

«emballage» ou «contenant» signifie une enveloppe ou un récipient, intérieur ou extérieur, employé pour contenir, emballer, empaqueter ou recouvrir un produit agricole;

«endroit» "*place*"

«endroit» comprend tout véhicule, navire, wagon de chemin de fer ou aéronef;

«inspecteur» "*inspector*"

«inspecteur» signifie une personne nommée ou désignée au poste d'inspecteur selon l'article 7;

«Ministre» "*Minister*"

«Ministre» désigne le ministre de l'Agriculture;

«nom de qualité» "*grade*..."

«nom de qualité» comprend toute marque, description ou désignation d'une qualité ou classe;

«préposé au classement» "*grader*"

«préposé au classement» signifie une personne nommée ou désignée au poste de préposé au classement en vertu de l'article 7;

«prescrit» ou «requis» "*prescribed*"

«prescrit» ou «requis» signifie prescrit par un règlement du gouverneur en conseil;

REGULATIONS RESPECTING THE GRADING, PACKING AND MARKING OF FRESH FRUIT AND VEGETABLES

Short Title

1. These Regulations may be cited as the *Fresh Fruit and Vegetable Regulations*.

Interpretation

2. In these Regulations,

"Act" means the *Canada Agricultural Products Standards Act*; (*Loi*)

"Canadian unit" means a unit of measurement set out in Schedule II to the *Weights and Measures Act*; (*unité canadienne*)

"catch-weight product" means produce that because of its nature cannot normally be portioned to a predetermined quantity and is, as a result, usually sold in containers of varying quantity; (*produit à poids variable*)

"condition defect" means any defect that may develop in produce during storage or transit; (*défaut d'état*)

"container" means a receptacle, package, wrapper or confining band; (*emballage*)

"declaration of net quantity" means the net quantity of produce marked on a container pursuant to section 10 of these Regulations; (*déclaration de quantité nette*)

"Director" means the Director of the Fruit and Vegetable Division, Department of Agriculture; (*directeur*)

"District Director" means the District Director of the Fruit and Vegetable Division, Department of Agriculture; (*directeur de district*)

"firm ripe" means that stage of the ripening process of an apple when the flesh is crisp and does not yield to slight pressure; (*mûries à point*)

"inspection certificate" means a certificate in such form as the Minister approves; (*certificat d'inspection*)

"inspection point" means any place normally serviced by an inspector or at which, in the opinion of the Director, an inspection can be conveniently provided; (*endroit d'inspection*)

"label" means any mark, sign, device, imprint, stamp, brand, ticket or tag; (*étiquette*)

"lot" means that quantity of produce that for any reason is considered separately from other produce as a subject of an inspection; (*lot*)

RÈGLEMENT CONCERNANT LE CLASSEMENT, L'EMBALLAGE ET LE MARQUAGE DES FRUITS ET DES LÉGUMES FRAIS

Titre abrégé

1. Le présent règlement peut être cité sous le titre: *Règlement sur les fruits et les légumes frais*.

Interprétation

2. Dans le présent règlement,

«certificat d'inspection» signifie un certificat préparé selon la formule prescrite par le Ministre; (*inspection certificate*)

«déclaration de quantité nette» signifie la quantité nette marquée sur un emballage selon l'article 10 du présent règlement; (*declaration of net quantity*)

«défaut d'état» signifie un défaut qui peut se développer durant l'entreposage ou en cours de transport; (*condition defect*)

«directeur» désigne le directeur de la Division des fruits et légumes du ministère de l'Agriculture; (*Director*)

«directeur de district» désigne le directeur de district de la Division des fruits et légumes du ministère de l'Agriculture; (*District Director*)

«emballage» comprend un récipient, un empaquetage, une enveloppe ou une bande; (*container*)

«endroit d'inspection» désigne un endroit normalement desservi par un inspecteur ou un endroit où, de l'avis du directeur, une inspection peut être facilement effectuée; (*inspection point*)

«espace principal» signifie la partie de l'étiquette apposée entièrement ou en partie sur la principale surface exposée; (*principal display panel*)

«étiquette» comprend une marque, un signe, un dessin, une impression, un cachet, un label ou une carte; (*label*)

«Loi» signifie la *Loi sur les normes des produits agricoles du Canada*; (*Act*)

«lot» désigne les produits qui, pour une raison quelconque, sont considérés séparément des autres pour inspection; (*lot*)

«mûries à point» signifie, quant aux pommes, ce stade de maturité où la chair est ferme et croquante et ne cède pas à une légère pression; (*firm ripe*)

«principale surface exposée» signifie dans le cas où l'emballage

a) a un côté ou une surface exposée ou visible dans les conditions normales ou habituelles de vente ou d'utilisation, la superficie totale de ce côté ou de cette surface, à l'exclusion du dessus,

POTATOES

60. The grades for potatoes are Canada No. 1, Canada No. 1 Large, Canada No. 1 Small and Canada No. 2.

Canada No. 1 Grade

61. (1) Canada No. 1 is the grade name for potatoes that

(*a*) have similar varietal characteristics;

(*b*) are firm;

(*c*) are not materially pointed, materially dumb-bell shaped or otherwise materially deformed;

(*d*) have skins that will not loosen readily during ordinary handling;

(*e*) have not more than 10 per cent of a lot that has more than 10 per cent of the surface flesh exposed;

(*f*) are reasonably clean;

(*g*) are free from dumb-bells, specimens from which knobs have been removed, blight, sprain, bacterial ring rot or other decay;

(*h*) are free from damage;

(*i*) have

(i) in the case of round varieties, a minimum diameter of 2 1/4 inches and a maximum diameter of 3 1/2 inches, and

(ii) in the case of long varieties, a minimum diameter of 2 inches and a maximum diameter of 3 1/2 inches except in the case of specimens 3 1/2 inches or more in length, which may have a minimum diameter of 1 3/4 inches, provided that in either case 60 per cent of the specimens have a diameter of at least 2 1/4 inches; and

(*j*) are properly packed.

(2) In this section, "free from damage" means the potatoes are free from

(*a*) scab that

(i) is pitted and

(A) affects an aggregate area per potato of more than 1/4 inch in diameter, or

(B) affects more than five per cent of the potatoes in the lot,

(ii) affects more than five per cent of the surface area of an individual potato, or

(iii) affects more than 50 per cent of the potatoes in the lot;

(*b*) hollow heart that exceeds 1/4 inch in length or width or is discoloured;

(*c*) sunburn that

(i) affects more than five per cent of the surface area of an individual potato, or

(ii) penetrates the flesh of a potato to a depth of more than 1/4 inch;

(*d*) greening that

POMMES DE TERRE

60. Les catégories des pommes de terre sont Canada nº 1, Canada nº 1 grosses, Canada nº 1 petites et Canada nº 2.

Catégorie Canada nº 1

61. (1) Canada nº 1 est le nom de la catégorie des pommes de terre qui

a) possèdent des caractéristiques variétales analogues;

b) sont fermes;

c) ne sont pas sensiblement pointues, ni sensiblement en forme d'haltère ni sensiblement déformées de toute autre façon;

d) ont une peau qui ne se détache pas facilement au cours de la manutention ordinaire;

e) ont plus de 10 pour cent de la chair superficielle exposée sur au plus 10 pour cent des spécimens;

f) sont raisonnablement propres;

g) sont exemptes de tubercules en forme d'haltère, de tubercules dont les excroissances ont été enlevées, de brûlure, de tacheture interne, de flétrissement bactérien ou d'autres décompositions;

h) sont exemptes d'avaries;

i) ont

(i) dans le cas des variétés rondes, un diamètre minimum de 2 1/4 pouces et un diamètre maximum de 3 1/2 pouces, et

(ii) dans le cas des variétés longues, un diamètre minimum de 2 pouces et un diamètre maximum de 3 1/2 pouces, à l'exception des tubercules d'une longueur de 3 1/2 pouces ou plus qui peuvent avoir un diamètre minimum de 1 3/4 pouce à la condition que, dans chaque cas, 60 pour cent des tubercules aient un diamètre d'au moins 2 1/4 pouces; et

j) sont convenablement emballées.

(2) Dans le présent article, «exemptes d'avaries» signifie que les pommes de terre sont exemptes

a) de gale qui

(i) est picotée et qui

(A) couvre une superficie globale ayant plus de 1/4 de pouce de diamètre sur chaque tubercule, ou

(B) altère plus de cinq pour cent des pommes de terre dans le lot,

(ii) couvre plus de cinq pour cent de la surface de chaque tubercule, ou

(iii) altère plus de 50 pour cent des pommes de terre dans le lot;

b) de cœur creux qui mesure plus de 1/4 de pouce de longueur ou de largeur ou qui est décoloré;

c) d'insolation qui

(i) altère plus de cinq pour cent de la superficie de chaque tubercule, ou

(ii) pénètre dans la chair d'un tubercule à une profondeur de plus de 1/4 de pouce;

d) verdissement qui

(i) affects more than 15 per cent of the surface area of an individual potato, or

(ii) penetrates the flesh of a potato to a depth that would not be removed by ordinary peeling;

(*e*) wireworm or grass root holes that

(i) exceed two per potato,

(ii) individually exceed 1/2 inch in depth or in the aggregate exceed 3/4 inch in depth, or

(iii) affect more than 10 per cent of the potatoes in the lot;

(*f*) sprouts that at shipping point exceed 1/2 inch in length or at a place other than shipping point exceed 1 inch in length when more than 10 per cent of the potatoes in any lot are so affected;

(*g*) any injury or defect or a combination thereof that materially affects the appearance of the potato, including healed-over flesh, rhizoctonia or silver scurf; and

(*h*) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (*a*) to (*g*), that

(i) affects the flesh of the potato and cannot be removed without a waste of more than five per cent by weight of a potato, or

(ii) affects the edibility or shipping quality of the potato. SOR/81-186, s. 22.

Canada No. 1 Large Grade

62. Canada No. 1 Large is the grade name for potatoes that have a minimum diameter of 3 inches and a maximum diameter of 4 1/2 inches but that in all other respects comply with the requirements of Canada No. 1 grade.

Canada No. 1 Small Grade

63. Canada No. 1 Small is the grade name for potatoes that have a minimum diameter of 1 1/2 inches and a maximum diameter of 2 1/4 inches but that in all other respects comply with the requirements of Canada No. 1 grade.

New Potatoes

64. (1) Notwithstanding section 61 and subject to subsection (2),

(*a*) new potatoes of a round variety shipped on or before September 15th in any year that do not comply with paragraphs 61(1)(*d*), (*e*) and (*f*), and

(*b*) new potatoes of a long variety,

(i) shipped on or before June 30th in any year that do not comply with paragraphs 61(1)(*d*), (*e*) and (*f*), and

(ii) shipped after June 30th and on or before September 15th in any year that do not comply with paragraphs 61(1)(*d*) and (*e*),

(i) altère plus de 15 pour cent de la superficie de chaque tubercule, ou

(ii) pénètre dans la chair d'un tubercule à une profondeur où il ne serait pas enlevé au cours d'un épluchage ordinaire;

e) de trous causés par les taupins ou par des racines de graminées et qui

(i) sont en nombre supérieur à deux par tubercule,

(ii) ont plus de 1/2 pouce de profondeur chacun ou, dans l'ensemble, ont plus de 3/4 de pouce de profondeur, ou

(iii) altèrent plus de 10 pour cent des pommes de terre dans le lot;

f) de germes dépassant, à un endroit d'expédition, 1/2 pouce de longueur ou à un endroit autre qu'un endroit d'expédition, 1 pouce de longueur lorsque plus de 10 pour cent des tubercules dans un lot quelconque en portent;

g) de tout défaut ou blessure ou d'une combinaison de défauts et blessures qui en altèrent sensiblement l'apparence, y compris, mais non exclusivement, la chair cicatrisée, la rhizoctonie ou la tache argentée; et

h) de tout défaut ou blessure ou d'une combinaison de défauts et blessures autres que ceux énumérés aux alinéas *a*) à *g*), et qui

(i) altèrent la chair de la pomme de terre et ne peuvent être enlevés sans gaspiller plus de cinq pour cent au poids du tubercule, ou

(ii) altèrent la comestibilité ou l'aptitude au transport des pommes de terre.

Catégorie Canada nº 1 grosses

62. Canada nº 1 grosses est le nom de la catégorie des pommes de terre qui ont un diamètre minimum de 3 pouces et un diamètre maximum de 4 1/2 pouces mais qui à tous autres égards sont conformes aux exigences de la catégorie Canada nº 1.

Catégorie Canada nº 1 petites

63. Canada nº 1 petites est le nom de la catégorie des pommes de terre qui ont un diamètre minimum de 1 1/2 pouce et un diamètre maximum de 2 1/4 pouces mais qui à tous autres égards sont conformes aux exigences de la catégorie Canada nº 1.

Pommes de terre nouvelles (Primeurs)

64. (1) Nonobstant l'article 61 et sous réserve du paragraphe (2),

a) les pommes de terre nouvelles d'une variété ronde expédiées au plus tard le 15 septembre de l'année de production qui ne satisfont pas aux alinéas 61(1)*d*), *e*) et *f*), et

b) les pommes de terre nouvelles d'une variété longue,

(i) expédiées au plus tard le 30 juin de l'année de production qui ne satisfont pas aux alinéas 61(1)*d*), *e*) et *f*), et

(ii) expédiées après le 30 juin et au plus tard le 15 septembre de l'année de production qui ne satisfont pas aux alinéas 61(1)*d*) et *e*),

but that in all other respects comply with the requirements of Canada No. 1 grade shall be deemed to meet the requirements of Canada No. 1 grade.

(2) New potatoes of Canada No. 1 grade shall meet the size requirements set out in paragraph 61(1)(*l*) except that those potatoes otherwise required to be of a minimum diameter of 2 inches or 2 1/4 inches may be of a minimum diameter of 1 7/8 inches. SOR/79-144, s. 19.

Canada No. 2 Grade

65. (1) Canada No. 2 is the grade name for potatoes that

(*a*) have similar varietal characteristics;

(*b*) are reasonably firm;

(*c*) are not seriously pointed, seriously dumb-bell shaped or otherwise seriously deformed;

(*d*) are free from dumb-bells, specimens from which knobs have been removed, sprain, bacterial ring rot or other decay;

(*e*) are free from damage;

(*f*) have a minimum diameter of 1 3/4 inches and a maximum diameter of 4 1/2 inches;

(*g*) have a diameter of not less than 2 inches in at least 75 per cent of the lot;

(*h*) have not more than one-third by weight of the lot seriously affected by dirt; and

(*i*) are properly packed.

(2) In this section, "free from damage" means that potatoes are free from

(*a*) scab that

(i) is pitted and cannot be removed without a waste of more than five per cent by weight of a potato, or

(ii) affects more than 25 per cent of the surface area of an individual potato;

(*b*) hollow heart that exceeds 1/4 inch in length or width or is discoloured;

(*c*) blight that

(i) is not dry, or

(ii) is dry but cannot be removed without a waste of more than five per cent by weight of a potato;

(*d*) wireworm or grass root injury that affects the flesh of the potato and cannot be removed without a waste of more than five per cent by weight of a potato;

(*e*) sprouts that at shipping point exceed 1/2 inch in length or at a place other than shipping point exceed 1 inch in length when more than 10 per cent of the potatoes in any lot are so affected; and

(*f*) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (*a*) to (*e*), that

(i) affects the flesh of the potato and cannot be removed without a waste of more than 10 per cent by weight of a potato, or

(ii) seriously affects the appearance, edibility or shipping quality of a potato.

mais qui, à tous autres égards, satisfont aux exigences de la catégorie Canada n° 1, doivent être considérées comme satisfaisant aux exigences de la catégorie Canada n° 1.

(2) Le calibre des pommes de terre de la catégorie Canada n° 1 doit être conforme aux exigences de l'alinéa 61(1)*i*) sauf que ces pommes de terre qui autrement doivent avoir un diamètre minimum de 2 pouces ou de 2 1/4 pouces peuvent en avoir un de 1 7/8 pouce. DORS/79-144, art. 19.

Catégorie Canada n° 2

65. (1) Canada n° 2 est le nom de la catégorie des pommes de terre qui

a) ont des caractéristiques variétales analogues;

b) sont raisonnablement fermes;

c) ne sont pas très pointues, ni sensiblement en forme d'haltère ni gravement déformées de toute autre façon;

d) sont exemptes de tubercules en forme d'haltère, de tubercules dont les excroissances ont été enlevées, de tacheture interne, de flétrissement bactérien ou d'autres décompositions;

e) sont exemptes d'avaries;

f) ont un diamètre minimum de 1 3/4 pouce et un diamètre maximum de 4 1/2 pouces;

g) ont, dans le cas d'au moins 75 pour cent du lot, un diamètre non inférieur à 2 pouces;

h) dans le cas d'au plus un tiers, au poids, sont gravement altérées par de la terre; et

i) sont convenablement emballées.

(2) Dans le présent article, «exemptes d'avaries» signifie que les pommes de terre sont exemptes

a) de gale qui

(i) est picotée et ne peut être enlevée sans gaspiller plus de cinq pour cent au poids du tubercule, ou

(ii) altère plus de 25 pour cent de la superficie de chaque tubercule;

b) de cœur creux qui mesure plus de 1/4 de pouce de longueur ou de largeur ou qui est décoloré;

c) de brûlure ou mildiou qui

(i) n'est pas sec, ou

(ii) est sec mais ne peut être enlevé sans gaspiller plus de cinq pour cent au poids du tubercule;

d) de blessures causées par les taupins ou des racines de graminés sur la chair du tubercule et qui ne peuvent être enlevées sans gaspiller plus de cinq pour cent au poids de chaque tubercule;

e) de germes qui, à l'endroit d'expédition, ont plus de 1/2 pouce de longueur ou, à un endroit autre qu'un endroit d'expédition, plus de 1 pouce de longueur lorsque plus de 10 pour cent des tubercules dans un lot quelconque en portent; et

f) de tout défaut ou blessure ou d'une combinaison de défauts et blessures autres que ceux énumérés aux alinéas *a*) à *e*), et qui

(i) en altèrent la chair et ne peuvent être enlevés sans gaspiller plus de 10 pour cent au poids d'un tubercule, ou

General Tolerances

66. (1) Notwithstanding anything in these Regulations, in he grading of Canada No. 1 grade, Canada No. 1 Large rade and Canada No. 1 Small grade potatoes not more than

(*a*) five per cent of the potatoes by weight may be below the minimum size,

(*b*) five per cent of the potatoes by weight may exceed the maximum size,

(*c*) three per cent of the potatoes by weight in the case of Canada No. 1 grade and five per cent of the potatoes by weight in the case of Canada No. 1 Large grade may be affected by hollow heart,

(*d*) one per cent of the potatoes by weight may be affected by decay,

(*e*) five per cent of the potatoes by weight may have grade defects other than those referred to in paragraphs (*a*), (*b*) and (*c*) but including that referred to in paragraph (*d*), and

(*f*) ten per cent of the potatoes by weight may have grade defects of any kind including those referred to in paragraphs (*a*) to (*e*),

nd still meet the grade standards for a grade.

(2) Notwithstanding anything in these Regulations, in the ading of Canada No. 2 grade potatoes not more than

(*a*) five per cent of the potatoes by weight may be below the minimum size,

(*b*) five per cent of the potatoes by weight may exceed the maximum size,

(*c*) ten per cent of the potatoes by weight may be affected by hollow heart,

(*d*) one per cent of the potatoes by weight may be affected by decay,

e) five per cent of the potatoes by weight may have grade lefects, other than those referred to in paragraphs (*a*), (*b*) and (*c*) but including that referred to in paragraph (*d*), and

(*f*) fifteen per cent of the potatoes by weight may have rade defects of any kind including those referred to in aragraphs (*a*) to (*e*),

d still meet the grade standards for a grade.

(ii) altèrent gravement l'apparence, la comestibilité ou l'aptitude au transport des tubercules.

Tolérances générales

66. (1) Nonobstant les dispositions du présent règlement, dans le classement des pommes de terre de la catégorie Canada n° 1, Canada n° 1 grosses et de la catégorie Canada n° 1 petites, au plus

a) cinq pour cent des tubercules au poids peuvent être de grosseur inférieure à la grosseur minimale,

b) cinq pour cent des tubercules au poids peuvent dépasser la grosseur maximale,

c) trois pour cent des tubercules au poids dans le cas de la catégorie Canada n° 1 et 5 pour cent des tubercules au poids dans le cas de la catégorie Canada n° 1 grosses peuvent être atteints de cœur creux,

d) un pour cent des tubercules au poids peuvent être atteints de pourriture,

e) cinq pour cent des tubercules au poids peuvent avoir des défauts de catégorie autres que ceux énumérés aux alinéas *a*), *b*) et *c*) mais y compris ceux énumérés à l'alinéa *d*), et

f) dix pour cent des tubercules au poids peuvent avoir des défauts de catégorie d'une espèce quelconque y compris ceux énumérés aux alinéas *a*) à *e*),

tout en répondant aux normes de catégorie pour une catégorie.

(2) Nonobstant les dispositions du présent règlement, dans le classement des pommes de terre de la catégorie Canada n° 2, au plus

a) cinq pour cent des tubercules au poids peuvent être de grosseur inférieure à la grosseur minimale,

b) cinq pour cent des tubercules au poids peuvent dépasser la grosseur maximale,

c) dix pour cent des tubercules au poids peuvent être atteints de cœur creux,

d) un pour cent des tubercules au poids peuvent être atteints de pourriture,

e) cinq pour cent des tubercules au poids peuvent avoir des défauts de catégorie autres que ceux énumérés aux alinéas *a*), *b*) et *c*) mais y compris ceux énumérés à l'alinéa *d*), et

f) quinze pour cent des tubercules au poids peuvent avoir des défauts de catégorie d'une espèce quelconque y compris ceux énumérés aux alinéas *a*) à *e*),

tout en répondant aux normes de catégorie pour une catégorie.

UNITED STATES STANDARDS
FOR GRADES OF
POTATOES

EFFECTIVE SEPTEMBER 1, 1971
AS AMENDED FEBRUARY 5, 1972

U.S. DEPARTMENT OF AGRICULTURE
[redacted]
WASHINGTON, D.C.
AGRICULTURAL MARKETING SERVICE

UNITED STATES STANDARDS FOR GRADES OF POTATOES[1]

(35 F.R. 18257)

Effective September 1, 1971

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SOURCE: 35 FR 18258, Dec. 1, 1970, unless otherwise noted. Redesignated at 42 FR 32514, June 27, 1977.

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GRADES

§ 2851.1540 U.S. Extra No. 1.

"U.S. Extra No. 1" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;

(b) Firm;

(c) Clean;

(d) At least fairly well matured;

(e) Fairly well shaped, with 50 percent or more well shaped;

(f) Free from:

(1) Freezing;

(2) Blackheart;

(3) Late blight, southern bacterial wilt and ring rot; and,

(4) Soft rot and wet breakdown.

(g) Free from injury caused by:

(1) Sprouts; and,

(2) Internal defects.

(h) Free from damage by any other cause. See §§ 2851.1564 and 2851.1565.

(i) Size. The potatoes shall be not less than 2¼ inches in diameter or 5 ounces in weight and shall not vary more than 1½ inches in diameter or more than 6 ounces in weight.

(j) For tolerances see § 2851.1546.

[35 FR 18258, Dec. 1, 1970; 36 FR 10771, June 2, 1971. Redesignated at 42 FR 32514, June 27, 1977]

§ 2851.1541 U.S. No. 1.

"U.S. No. 1" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;

(b) Firm;

(c) Fairly clean;[2]

(d) Fairly well shaped;

(e) Free from:

(1) Freezing;

(2) Blackheart;

(3) Late blight, southern bacterial wilt and ring rot; and,

(4) Soft rot and wet breakdown.

(f) Free from damage by any other cause. See §§ 2851.1564 and 2851.1565.

(g) Size. Not less than 1⅞ inches in diameter, unless otherwise specified in connection with the grade.

(h) For tolerances see § 2851.1546.

§ 2851.1542 U.S. Commercial.

"U.S. Commercial" consists of potatoes which meet the requirements of U.S. No. 1 grade except for the following:

(a) Free from serious damage caused by:

(1) Dirt or other foreign matter;

(2) Russet scab; and,

(3) Rhizoctonia.

(b) Increased tolerances for defects specified in § 2851.1546.

§ 2851.1543 U.S. No. 2.

"U.S. No. 2" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;

(b) Not seriously misshapen;

(c) Free from:

(1) Freezing;

(2) Blackheart;

(3) Late blight, southern bacterial wilt and ring rot; and,

(4) Soft rot and wet breakdown.

(d) Free from serious damage by any other cause. See §§ 2851.1564 and 2851.1565.

(e) Size. Not less than 1½ inches in diameter, unless otherwise specified in connection with the grade.

(f) For tolerances see § 2851.1546.

UNCLASSIFIED

§ 2851.1544 Unclassified.

"Unclassified" consists of potatoes which have not been classified in accordance with any of the foregoing grades. The term "unclassified" is not a grade within the meaning of these standards but is provided as a designation to show that no grade has been applied to the lot.

SIZE

§ 2851.1545 Size.

(a) The minimum size, or minimum and maximum sizes may be specified in connection with the grade in terms of diameter or weight of the individual potato, or in accordance with one of the size designations in Table I or Table II: *Provided*, That sizes so specified shall not be in conflict with the basic size requirements for the grade.

(b) When size is specified in terms of the customary sizes of potatoes packed to count in standard 50-pound cartons, the weight ranges shown in Table II shall apply. These size designations may be applied to potatoes packed in any size container: *Provided*, That the weight ranges are within the limits specified.

TABLE I

Size designation	Minimum diameter[1] or weight		Maximum diameter[1] or weight	
	Inches	*Ounces*	*Inches*	*Ounces*
Size A[2]	1⅞	(3)	(3)	(3)
Size B	1½	(3)	2¼	(3)
Small	1¾	(3)	2½	6
Medium	2¼	5	3¼	10
Large	3	10	4½	16

[1] Diameter means the greatest dimension at right angles to the longitudinal axis, without regard to the position of the stem end.

[2] In addition to the minimum size specified, a lot of potatoes designated as Size A shall contain at least 40 percent of potatoes which are 2½ inches in diameter or larger or 6 ounces in weight or larger.

[3] No requirement.

TABLE II

Size designation	Minimum weight	Maximum weight
	Ounces	Ounces
Under 50	16	—
50	12	18
60	10	18
70	9	16
80	8	13
90	7	12
100	6	10
110	5	9
120	4	8
130	4	8
140	4	6
Over 140	4	6

[35 FR 18258, Dec. 1, 1970, as amended at 37 FR 2745, Feb. 5, 1972. Redesignated at 42 FR 32514, June 27, 1977]

TOLERANCES

§ 2851.1546 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by weight, are provided as specified:

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[1] Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act, or with applicable State laws and regulations.

[2] Potatoes in containers bearing official State Seed Certification Tags and Seals are not required to be fairly clean but shall be free from damage by dirt.

(a) *For defects*—(1) *U.S. Extra No. 1.* A total of 5 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That not more than two-fifths of this tolerance, or 2 percent, shall be allowed for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than one-half of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 2851.1547.

(2) *U.S. No. 1.* A total of 8 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 5 percent for external defects;

(ii) 5 percent for internal defects; or,

(iii) 3 percent for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 2851.1547.

(3) *U.S. Commercial.* A total of 20 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 10 percent for potatoes which fail to meet the requirements for U.S. No. 2 grade, including therein not more than:

(ii) 6 percent for external defects;

(iii) 6 percent for internal defects; or,

(iv) 3 percent for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 2851.1547.

(4) *U.S. No. 2.* A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 6 percent for external defects;

(ii) 6 percent for internal defects; or,

(iii) 3 percent for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 2851.1547.

(b) *For off-size.* (1) Not more than 3 percent of the potatoes in any lot may be smaller than the required or specified minimum size except that a tolerance of 5 percent shall be allowed for potatoes packed to meet a minimum size of 2¼ inches or larger in diameter or 5 ounces or more in weight. In addition, not more than 10 percent may be larger than any required or specified maximum size. See § 2851.1547.

(2) When a percentage of the potatoes is specified to be of a certain size and larger, individual samples shall have not less than one-half of the percentage specified: *Provided*, That the average for the entire lot is not less than the percentage specified.

APPLICATION OF TOLERANCES

§ 2851.1547 Application of tolerances.

Individual samples shall have not more than double the tolerances specified, except that at least one defective and one off-size potato may be permitted in any sample: *Provided*, That en route or at destination one-tenth of the samples may contain three times the tolerance permitted for potatoes which are frozen or affected by soft rot or wet breakdown: *And provided further*, That the averages for the entire lot are within the tolerances specified for the grade.

SAMPLES FOR GRADE AND SIZE DETERMINATION

§ 2851.1548 Samples for grade and size determination.

Individual samples shall consist of at least 20 pounds. When individual packages contain at least 20 pounds, each individual sample is drawn from one package; when packages contain less than 20 pounds, a sufficient number of adjoining packages are opened to provide at least a 20-pound sample. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

SKINNING

§ 2851.1549 Skinning.

(a) The following definitions provide a basis for describing lots of potatoes as to the degree of skinning whenever description may be appropriate:

(1) "Practically no skinning" means that not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered";

(2) "Slightly skinned" means that not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered";

(3) "Moderately skinned" means that not more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered"; and

(4) "Badly skinned" means that more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered".

DEFINITIONS

§ 2851.1550 Similar varietal characteristics.

"Similar varietal characteristics" means that the potatoes in any lot have the same general shape, color and character of skin, and color of flesh.

§ 2851.1551 Firm.

"Firm" means that the potato is not shriveled or flabby.

§ 2851.1552 Clean.

"Clean" means that at least 90 percent of the potatoes in any lot are practically free from dirt or staining and practically no loose dirt or other foreign matter is present in the container.

§ 2851.1553 Fairly clean.

"Fairly clean" means that at least 90 percent of the potatoes in any lot are reasonably free from dirt or staining and not more than a slight amount of loose dirt or foreign matter is present in the container.

§ 2851.1554 Mature.

"Mature" means that the skins of the potatoes are generally firmly set and not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered."

§ 2851.1555 Fairly well matured.

"Fairly well matured" means that the skins of the potatoes are generally fairly firmly set and not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered."

§ 2851.1556 Well shaped.

"Well shaped" means that the potato has the normal shape for the variety.

§ 2851.1557 Fairly well shaped.

"Fairly well shaped" means that the potato is not materially pointed, dumbbell-shaped or otherwise materially deformed.

§ 2851.1558 Seriously misshapen.

"Seriously misshapen" means that the potato is seriously pointed, dumbbell-shaped or otherwise badly deformed.

§ 2851.1559 Injury.

"Injury" means any defect, or any combination of defects, which more than slightly detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any internal defect outside of or nor entirely confined within the vascular ring which cannot be removed without a loss of more than 3 percent of the total weight of the potato.

§ 2851.1560 Damage.

"Damage" means any defect, or any combination of defects, which materially detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot be removed without a loss of more than 5 percent of the total weight of the potato. See Tables III and IV.

§ 2851.1561 **Serious damage.**

"Serious damage" means any defect, or any combination of defects, which seriously detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot be removed without a loss of more than 10 percent of the total weight of the potato. See Tables III and IV.

§ 2851.1562 **Freezing.**

"Freezing" means that the potato is frozen or shows evidence of having been frozen.

§ 2851.1563 **Soft rot or wet breakdown.**

"Soft rot or wet breakdown" means any soft, mushy, or leaky condition of the tissue such as slimy soft rot, leak, or wet breakdown following freezing injury.

§ 2851.1564 **External defects.**

"External defects" are defects which can be detected externally. However, cutting may be required to determine the extent of the injury. Some external defects are listed in Table III.

TABLE III—EXTERNAL DEFECTS

Defect	Damage: When materially detracting from appearance of potato	Damage (or): When removal causes loss of more than 5 percent of total weight of potato	Serious damage: When seriously detracting from appearance of potato	Serious damage (or): When removal causes loss of more than 10 percent of total weight of potato
Air cracks	X		X	
Bruises	X	X	X	X
Dirt	X		X	
Enlarged lenticels	X		X	
External discoloration	X		X	
Flea Beetle injury	X	X	X	X
Greening	X	X	X	X
Rhizoctonia	X		X	
Scab, pitted	X	X	X	X
Scab, russet	X		X	
Scab, surface	When more than 5 percent of surface affected.		When more than 25 percent of surface affected.	
Sunburn		X		X
Second growth	X		X	
Growth cracks	X		X	

Defects	Damage	Serious damage[1]
Wireworm or grass damage	When any hole in a potato 2½ inches in diameter or 6 ounces in weight is more than ¾ inch long, or when the aggregate length of all holes is more than 1¼ inches, or correspondingly shorter or longer holes in smaller or larger potatoes.	When any hole in a potato 2½ inches in diameter or 6 ounces in weight is more than 1¼ inches long, or when the aggregate length of all holes is more than 3 inches, or correspondingly shorter or longer holes in smaller or larger potatoes.
Insects or worms	(See serious damage)	When present inside the potato.
Artificial coloring	When unsightly or when concealing any defect causing damage or when penetrating the flesh and removal causes loss of more than 5 percent of total weight of potato.	When concealing a serious defect or when penetrating into the flesh and removal causes loss of more than 10 percent of total weight of potato.
Sprouts	When more than 10 percent of the potatoes in any lot have any sprout more than ¾ inch in length or have individual sprouts or clusters of sprouts which materially detract from the appearance of the potato.	

[1] The following defects are considered serious damage when present in any degree:

1. Freezing.
2. Late blight.
3. Ring rot.
4. Southern bacterial wilt.
5. Soft rot.
6. Wet breakdown.

§ 2851.1565 **Internal defects.**

"Internal defects" are defects which cannot be detected without cutting the potato. Some internal defects are listed in Table IV.

TABLE IV—INTERNAL DEFECTS

Defect	Damage	Serious damage
Hollow Heart	When materially detracting from the internal appearance.	When seriously detracting from the internal appearance.
Ingrown sprouts	When removal causes a loss of more than 5 percent of the total weight of the potato.	When removal causes a loss of more than 10 percent of the total weight of the potato.
Internal discoloration occurring entirely within the vascular ring.	When more than the equivalent of 3 scattered light brown spots ⅛ inch in diameter in a potato 2½ inches in diameter or 6 ounces in weight, or correspondingly lesser or greater number of spots in smaller or larger potatoes.	When more than the equivalent of 6 scattered light brown spots ⅛ inch in diameter in a potato 2½ inches in diameter or 6 ounces in weight, or correspondingly lesser or greater number of spots in smaller or larger potatoes.
Internal discoloration outside of or not entirely confined within the vascular ring.	When removal causes a loss of more than 5 percent of the total weight of the potato.	When removal causes a loss of more than 10 percent of the total weight of the potato.

METRIC CONVERSION TABLE

§ 2851.1566 **Metric conversion table.**

Inches	Millimeters (mm)
⅛ equals	3.2
¼ equals	6.4
½ equals	12.7
¾ equals	19.1
1 equals	25.4
1½ equals	38.1
2 equals	50.8
2½ equals	63.5
3 equals	76.2
3½ equals	88.9
4 equals	101.6
4½ equals	114.3
Ounces	*Grams*
1 equals	28.35
4 equals	113.40
5 equals	141.75
6 equals	170.10
7 equals	198.45
8 equals	226.80
9 equals	255.15
10 equals	283.50
12 equals	340.20
14 equals	396.90
16 equals	453.60
18 equals	510.30
19 equals	538.65
20 equals	567.00

These standards shall become effective on September 1, 1971 and will thereupon supersede the United States Standards for Grades of Potatoes which have been in effect since July 15, 1958 (7 CFR 51.1540–51.1556).

Dated: November 23, 1970.

G. R. GRANGE,
Deputy Administrator,
Marketing Services.

[F.R. Doc. 70-15838; Filed, Nov. 27, 1970; 8:45 a.m.]

AUTHORITY: The provisions of this subpart issued under secs. 203, 205, 60 Stat. 1087, as amended, 1090 as amended; 7 U.S.C. 1622, 1624.

ANNEX III.

CANADIAN TARIFF TREATMENT AND OTHER IMPORT REGULATIONS

ANNEX III.

CANADIAN TARIFF TREATMENT AND OTHER IMPORT REGULATIONS

The act requires that whenever the Secretary of Agriculture issues grade, size, quality, or maturity regulations under a domestic marketing order for a particular commodity, he must likewise issue the same or comparable regulations on imports of that commodity, if it is so designated by statute, for the same period of time. Marketing orders for fresh potatoes are presently active in five production areas - Idaho, Oregon, Washington, Colorado, and Virginia/North Carolina.

CANADIAN TARIFF TREATMENT AND OTHER IMPORT REGULATIONS

Tariff treatment

Potatoes imported into Canada are classifed as seed potatoes or other than seed potatoes. The Canadian tariff item, description, and most-favored-nation (MFN) rates of duty for 1982 and 1987 are shown in the following table.

Table III-1.

Item No.	Description	MFN rate of duty effective	
		1.1.1982	1.1.1987
		Cents per hundredweight	
7120-1	Seed potatoes for propagating purposes, under such regulations as the Minister (of Agriculture) may prescribe	36.6	35
7395-1	Potatoes, in their natural state, n.o.p.	36.6	35

The exact staging of the Canadian duty rate for potatoes imported under items 7120-1 and 8305-1 during 1980-87 is as follows:

Table III.2.

Period	Cents per hundredweight
Pre-MTN 1/	37.5
1980	37.2
1981	36.9
1982	36.6
1983	36.2
1984	35.9
1985	35.6
1986	35.3
1987	35.0

1/ Rate in effect before 1980.

Potatoes, white or Irish: U.S. rates of duty, ~~present and negotiated~~

TSUS item	Commodity	Rate prior to Jan. 1, 1980	Rates of duty, effective with respect to articles entered, or withdrawn from warehouse, for consumption on and after—							
	Rate		Jan. 1, 1980	Jan. 1, 1981	Jan. 1, 1982	Jan. 1, 1983	Jan. 1, 1984	Jan 1, 1985	Jan. 1, 1986	Jan. 1, 1987
	Potatoes, white or Irish:									
	Seed, certified by a responsible officer or agency of a foreign government in accordance with official rules and regulations to have been grown and approved especially for use as seed in containers marked with the foreign government's official certified seed potato tags:									
137.20	For not over 114,000,000 pounds entered during the 12-month period beginning September 15 in any year.	37.5¢/100 lbs.	37¢/100 lbs.	37¢/100 lbs.	36.5¢/100 lbs.	36¢/100 lbs.	36¢/100 lbs.	35.5¢/100 lbs.	35¢/100 lbs.	35¢/100 lbs.
137.21	Other	75¢/100 lbs.	70¢/100 lbs.	65¢/100 lbs.	60¢/100 lbs.	55¢/100 lbs.	50¢/100 lbs.	45¢/100 lbs.	40¢/100 lbs.	35¢/100 lbs.
	Other than certified seed:									
137.25	For not over 45,000,000 pounds and such additional quantity as may be allowed pursuant to headnote 2 of this part, entered during the 12-month period beginning September 15 in any year.	37.5¢/100 lbs.	37¢/100 lbs.	37¢/100 lbs	36.5¢/100 lbs.	36¢/100 lbs.	36¢/100 lbs.	35.5¢/100 lbs.	35¢/100 lbs.	35¢/100 lbs.
137.28	Other	75¢/100 lbs.	70¢/100 lbs.	65¢/100 lbs.	60¢/100 lbs.	55¢/100 lbs.	50¢/100 lbs.	45¢/100 lbs.	40¢/100 lbs.	35¢/100 lbs.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1982)

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 8. - Vegetables

Articles	Units of Quantity	Rates of Duty 1	Rates of Duty LDDC	Rates of Duty 2
etables, fresh, chilled, or frozen, etc. (con.):				
Peas:				
If entered during the period from July 1 to September 30, inclusive, in any year:				
Fresh or chilled:				
Pigeon peas	Lb.	Free		3.9¢ per lb.
Other	Lb.	0.5¢ per lb.		3.9¢ per lb.
Frozen:				
Pigeon peas	Lb.	Free		3.9¢ per lb.
Other	Lb.	1¢ per lb.		3.9¢ per lb.
Other:				
Pigeon peas		0.8¢ per lb.		3.9¢ per lb.
Fresh or chilled	Lb.			
Frozen	Lb.			
Other		2¢ per lb.		3.9¢ per lb.
Fresh or chilled	Lb.			
Frozen	Lb.			
Peppers	Lb.	2.5¢ per lb.		2.5¢ per lb.
If products of Cuba		2.2¢ per lb. (s)		
Potatoes, white or Irish:				
Seed, certified by a responsible officer or agency of a foreign government in accordance with official rules and regulations to have been grown and approved especially for use as seed, in containers marked with the foreign government's official certified seed potato tags:				
For not over 114,000,000 pounds entered during the 12-month period beginning September 15 in any year	Cwt.	36.5¢ per 100 lbs.	35¢ per 100 lbs.	75¢ per 100 lbs.
Other	Cwt.	60¢ per 100 lbs.	35¢ per 100 lbs.	75¢ per 100 lbs.
Other than such certified seed:				
For not over 45,000,000 pounds and such additional quantity as may be allowed pursuant to headnote 2 of this part, entered during the 12-month period beginning September 15 in any year	Cwt.	36.5¢ per 100 lbs.	35¢ per 100 lbs.	75¢ per 100 lbs.
If products of Cuba and entered during the period from December 1 in any year to the last day of the following February, both dates inclusive		30¢ per 100 lbs. (s)		
Other	Cwt.	60¢ per 100 lbs.	35¢ per 100 lbs.	75¢ per 100 lbs.
If products of Cuba and entered during the period from December 1 in any year to the last day of the following February, both dates inclusive		30¢ per 100 lbs. (s)		
Radishes	Lb.	6% ad val.		50% ad val.

(s) = Suspended. See general headnote 3(b).

Note: For explanation of the symbol "A" or "A*" in the column entitled "GSP", see general headnote 3(c).

Table III.5.

CANADIAN AND U.S. CONSUMER PRICE INDICES - 1976-1986

1981 = 100

Year	Canada	Annual Percent Change	United States	Annual Percent Change
1976	62.9		62.6	
1977	67.9	+7.9	66.6	+6.4
1978	73.9	+8.8	71.7	+7.7
1979	80.7	+9.2	79.8	+11.3
1980	88.9	+10.2	90.6	+13.5
1981	100.0	+12.5	100.0	+11.0
1982	110.8	+10.8	106.1	+6.1
1983	117.2	+5.8	109.5	+3.2
1984	122.3	+4.4	114.2	+4.3
1985	127.2	+4.0	118.3	+3.6
1986	132.4	+4.1	120.6	+1.9
Compounded annual average		7.73		6.78

Source: Prices Division, Statistics Canada, U.S.Data converted to a 1981-base for Comparison Purposes.

ANNEX IV.

STATISTICAL COUNTRY PROFILES

ANNEX IV.

STATISTICAL COUNTRY PROFILES

Table IV.1.

TEN COUNTRIES IN THE WORLD WITH HIGHEST POTATO PRODUCTION 1980-1982

COUNTRY	PRODUCTION	AREA	YIELD
	- '000 t.-	- 000 ha -	-t./ha.0-
USSR	72,387	6,882	11
CHINA	55,775	5,646	10
POLAND	33,635	2,260	15
USA	14,979	494	30
GERMAN DR	9,798	507	19
INDIA	9,275	712	13
GERMANY FR	8,058	282	29
UK	6,623	196	34
FRANCE	6,616	220	30
NETHERLANDS	6,310	168	38

Source: Potato Atlas, International Potato Centre, Peru

Table IV.2

STATISTICAL PROFILE (1983 - 1985 AVERAGE UNLESS NOTED)

	CANADA	UNITED STATES	NETHELANDS
Annual Production('000 cwt.)	61,560	367,536	
142,054			
Annual Acreage planted	290,200	1,339,300	405,955
Average yield/acre (cwt.)	215	282	350
Number of enterprises	1,215[1]	n.a.	21,400[2]
End use- % of production:[3]	32	32	27[5]
Table stock[4]	26	50	15
Processing			29[5]
Seed sales	12	6	12
Own use seed/feed	8	3	10
Storage loss/culls	21	10	7
Total exports('000 cwt.)	7,658	10,708[6]	34,373
as % of total production	12	2.9	24
Type as % of total exports	To U.S.[7]	to Cda[7]	to EEC[7]
Table	49 69	28 94 [8]	74 82 [9]
Seed	32 32	3 68	26 64 [10]
Exports to:	US as % of total	Cda as % of total	EEC as % of total
	45	32	38
Per capita consumption(lbs/year)	150[11]	117[14]	184
Total imports('000 cwt.)	3,571[13]	4,476[14]	6,020[15]
% of domestic production	6	1[6]	4
By type: Table[16]	90	63	
Seed[16]	6	21	
Processing	4	16[17]	

(1) Based on N.B. and P.E.I. Figures. P.E.I.: 1815, N.B. 400
(2) Based on 1979 data
(3) United States based on 1981 - 1983 crop years
(4) Based on N.B. and P.E.I. only. 1980 - 1984 crop year average.
(5) Based on allocation of exports between starch and table, 1974, 1978
(6) 1982 - 1984 average production: 350,200
1981 - 1983 average production: 343,200
(7) Percent of each type of export shipped to the country indicated. For example, 75% of Canadian table stock exports were to the U.S., representing approximately .75 x .49 x 768209 = 2,814,391 cwt. on average from 1983 to 1985
(8) Assumes exports listed as table and seed are all table
(9) Includes processed products for human consumption.
(10) based on allocation of exports between starch and table, 1974, 1978
(11) 1982 - 1984 average
(12) 1981 - 1983 average
(13) 1982 - 1984 average
(14) 1981 - 1983 average (crop year)
(15) 1982 - 1984 average
(16) Based on U.S. portions of seed and table stock
(17) Fresh equivalent

Table IV-3.

CANADIAN PRODUCTION AND CONSUMPTION

YEAR	PRODUCTION	ACREAGE	YIELD PER ACRE	ANNUAL PER CAPITA CONSUMPTION
	per '000cwt.		-cwt.-	-pounds-
1977	54,969	276,798	199	
1978	55,020	273,720	201	159
1979	50,855	279,550	218	173
1980	54,619	264,180	207	156
1981	59,154	273,100	217	143
1982	61,707	280,000	220	147
1983	56,352	279,300	202	159
1984	61,536	289,400	213	145
1985	66,792	301,900	230	
TREND	1.76%	0.88%	1.11%	-184%

(Annual % change)

Source: Statistics Canada

Table IV-4.

PEI AND NEW BRUNSWICK DISPOSITION*

CWT								CANADA		
								FRESH EQUIVALENT PRODUCTION		
YEAR	TOTAL	TABLE	SEED	LOCAL USE AND PROCESSING	LOCAL USE SEED	CULLAGE AND LOSS	POTATOES PURCHASED FOR PROCESSING	FROZEN FRIES	DEHYDRATED	CANNED
1974							10700602	6989136		195448
1975							10128778	7146788		215732
1976							9893136	7942660		220440
1977							11628344	8408692	3461040	154528
1978							12464936	8727004	2883936	164824
1979							14359158	10326316	3350688	196724
1980	24808386	7673841	4101240	6583737	2230000	4219568	13137960	10724736	3006784	150744
1981	29419973	9990867	3793635	7600247	2376930	5658294	12227776	9863128	2767600	274824
1982	31212243	8863367	3012531	7412262	2315200	9608883				
1983	26552280	9355812	3241793	7522451	2333800	4098424	11372042	10651872	2019600	138336
1984	30509316	9920293	3442520	8132408	2419089	6595008				
TREND	2.99%	4.21%	-5.31%	4.05%	1.43%	5.29%	1.81%	4.85%	-7.40%	-0.90%

(Annual % Increase)

* Disposition statisitics relate to crop years, processing statistics relate to calendar years

SOURCE: (1) Potato Market Review, 1984 - 1985
(2) Statistics Canada Bulletin 32-218; Fruit and Vegetable Processing Industries

Table IV-5.

CANADIAN EXPORTS BY TYPE AND TO UNITED STATES

YEAR	TOTAL BY TYPE (CWT)				EXPORTS TO U.S. BY TYPE (CWT)			
	TOTAL	TABLE	SEED	PROCESSING	TOTAL	TABLE	SEED	PROCESSING
1978	3258462	1184212	2074250					
1979	5138641	2435380	2703261		1290112	722585	533209	34318
1980	6214365	2796228	3418137		1682747	1131333	528294	23120
1981	7048785	4101700	2947085		3742560	2351555	1362731	28274
1982	7254745	3685032	2195713	1374000	4510582	3270386	1198862	41334
1983	6749867	3049027	2498840	1202000	3252359	2586468	619775	46116
1984	8970015	4446772	2723243	1800000	2550013	1892615	568514	88884
1985					4711209	3747828	963381	
TREND	11.98%	13.72%	0.43%	14.60%	13.23%	17.25%	2.72%	23.22%

(Annual % change)

SOURCE: Potato Market Review; 1984 - 1985 & 1979 - 1983

Table IV-6.

UNITED STATES PRODUCTION AND CONSUMPTION

YEAR	PRODUCTION	ACREAGE	YIELD PER ACRE	ANNUAL* PER CAPITA CONSUMPTION
	per '000cwt.		-cwt.-	-pounds-
1975	321,978	1,298,500	256	121
1976	357,666	1,404,200	261	115
1977	355,334	1,398,900	261	120
1978	366,200	1,401,000	267	120
1979	342,400	1,295,400	272	118
1980	303,900	1,175,400	265	113
1981	340,600	1,255,300	276	116
1982	355,100	1,302,800	280	121
1983	333,900	1,272,100	269	
1984	361,600	1,336,700	279	
1985	407,109	1,490,100	299	
TREND	0.87%	-0.23%	1.10%	-0.18%

(Annual % change)

Source: All data from Potatoes and Sweetpotatoes, Statistical Bulletins # 645 & 709, and Potatoes, Sept. 1986, except for*; Potato Statistical Yearbook (1984-85, National Potato Council), p.39.

Table VI-7.

'000 CWT	UNITED STATES UTILIZATION								
						PROCESSING BY PRODUCT			
YEAR	TOTAL	TABLE	PROCESSING	SEED SALES	FEED, OWN USE, SHRINKAGE AND LOSS	FROZEN	CHIPS AND SHOESTRINGS	DEHYDRATION	OTHER
1974	342395	125726	154157	19390	43122	69206	32777	34660	17514
1975	315418	114160	154106	20674	26478	70641	34107	33821	15537
1976	357666	123091	174747	20497	39331	79654	34583	40354	20156
1977	355334	117171	171902	21028	45233	79949	36947	32783	22223
1978	354274	112336	174274	19750	47914	79539	37839	33243	23653
1979	341956	115109	166104	18075	42668	74320	38276	30784	22724
1980	303905	98066	153230	19089	33520	67208	37894	28222	19906
1981	340623	111976	172328	20393	35926	79829	39344	29875	23280
1982	355131	120320	170516	19456	44839	76089	40776	28133	25518
1983	333911	107349	171226	20912	34424	74350	43311	26754	26811
1984	362612	113759	185680	22646	40527	87350	42339	27845	28146
1985	407109	126248	192144	19790	68927	94741	42336	29958	25109
TREND	0.90%	-0.33%	1.34%	0.35%	2.74%	1.66%	2.40%	-2.64%	3.97%

(Annual % change)

SOURCE: Potatoes and Sweetpotatoes, United States Department of Agriculture Economics and Statistics Service, Crop Reporting Board. Bulletins 645, 709, POT6(9-86)

Table IV-8.

UNITED STATES EXPORTS * BY TYPE AND TO CANADA

YEAR	TOTAL BY TYPE ('000 CWT)					EXPORTS TO CANADA BY TYPE ('000 CWT)				
	TOTAL(1)	TABLE(1)	SEED(1)	DEHYDRATED	FROZEN	TOTAL	TABLE	SEED	DEHYDRATED	FROZEN
1979	12674	1806	177	9116	1575	3691	3048	177	407	59
1980	10415	2567	194	5706	1948	3282	2731	128	357	66
1981**	12027	3450	388	6064	2125	3894	3352	149	328	65
1982**	9219	2456	138	4334	2291	2869	2298	166	348	57
1983**	10878	3169	209	4655	2845	3624	3001	186	372	65
1984(2)	3867	1905	20	1041	901	3970	3210	229	471	60
TREND (Annual % change)	-4.85%	9.72%	0.36%	-17.23%	13.37%	-1.58%	-1.83%	3.40%	-2.18%	0.48%

* Expressed in fresh weight equivalent
** adjusted upward for Canadian import data
(1) adjusted upward for Canadian import data
(2) partial year data: Oct. - Jan. for TOTAL BY TYPE section

SOURCE: Potato Statistical Yearbook (National Potato Council, 1984 - 1985) p. 37;
Potato Market Review 1984 - 1985, pp. 30 & 67; Potato Market Review
1979 - 1983, pp. 46 & 137.

Table 9.

NETHERLANDS PRODUCTION AND CONSUMPTION

YEAR	PRODUCTION	ACREAGE	YIELD PER ACRE	ANNUAL PER CAPITA CONSUMPTION
	per '000cwt.		-cwt.-	-pounds-
1970	125,048	388,284	322	87
1971	126,478	380,627	332	86
1972	122,782	367,783	334	85
1973	126,962	387,014	328	84
1974	134,090	392,236	342	82
1975	110,088	373,217	295	80
1976	105,226	397,423	265	77
1977	126,544	420,468	301	79
1978	137,082	398,868	344	82
1979	138,094	410,514	336	82
1980	137,852	425,087	324	83
1981	141,768	408,200	347	83
1982	136,818	410,020	334	83
1983	119,042	403,598	295	82
1984	146,806	396,838	370	
1985	160,314	417,430	384	
TREND	1.51%	-0.19%	1.78%	-0.29%

(Annual % change)

Source: Handbook of E.E.C. Potato Statistics.

Table IV-10.

'000 CWT								FOOD PROCESSING **			
	NETHERLANDS DISPOSITION*										
YEAR	TOTAL	STARCH	FRESH	FOOD PROCESSING	SEED	LOSSES AND CULLS	FEED STOPA PURCHASES	FRENCH FRIES	DEHYDRATED	SNACKS	OTHER
1974								6688	2200	1540	132
1975								7128	2354	1386	132
1976								7260	2420	1408	132
1977								8536	2684	1364	176
1978								9592	2134	1386	132
1979								10604	2068	1430	154
1980											
1981	156046	55198	48686	19208	17864	10252	4840	13750	2706	1474	154
1982	152196	46904	47916	21032	18436	10802	7106	15224	3432	1606	154
1983	136158	36388	43472	21956	16588	10912	6842	16456	3674	1760	110
1984	163592	46750	44000	24816	20614	11220	16192	16456	3564	1738	154
1985	186296	56584	41822	28248	19536	13464	26642	21142	4378	1672	176
TREND	4.53%	0.54%	-3.91%	9.49%	2.97%	6.04%	42.75%	10.27%	6.10%	1.98%	1.15%

(Annual % change)

* Disposition of domestic crop and imports

** The total of these volumes approximates but does not match the total shown for food processing

SOURCE: The European Potato Industry, Potato Marketing Board

Table VI-11.

NETHERLANDS EXPORTS BY TYPE AND TO E.E.C.

	TOTAL BY TYPE ('000 CWT)			TOTAL TO E.E.C.		
YEAR	TOTAL	"WARE"	SEED	TOTAL	"WARE"	SEED
1979	21,362	21,362			18,854	
1980	26,532	26,532		25,256	20,152	5,104
1981	38,578	30,976	7,602	32,208	26,180	6,028
1982	38,311	30,096	8,215	29,458	23,342	6,116
1983	34,474	25,542	8,932	26,290	21,428	4,862
1984	33,644	26,070	7,574			7,150
1985	35,002	24,552	10,450			5,302
TREND	5.60%	0.43%	5.91%	0.12%	3.79%	1.54%

(Annual % change)

Source: A Commercial Study of Dutch Potato Exports
(Potato Marketing Board, Report No. 18, 1986).

ANNEX V.

ADDITIONAL STATISTICS

ANNEX V.
ADDITIONAL STATISTICS

Table V-1.

RELATIVE IMPORTANCE OF POTATO RECEIPTS FOR CROP AND TOTAL FARM CASH INCOME FOR PRINCE EDWARD ISLAND
1976 to 1985

($ million)

YEAR	INCOME POTATOES	TOTAL INCOME CROPS	POTATOES AS % OF TOTAL CROPS	TOTAL CASH INCOME	POTATOES AS % OF TOTAL CASH INCOME
1985	54.3	86.2	63.0%	176.1	30.8%
1984	72.1	105.1	68.6%	194.4	37.1%
1983	65.0	93.2	69.7%	175.7	36.7%
1982	52.2	76.5	68.6%	164.2	32.0%
1981	79.2	105.4	75.1%	190.1	41.6%
1980	45.0	63.7	70.6%	139.2	32.3%
1979	29.7	50.3	59.1%	121.4	24.5%
1978	26.7	39.5	67.6%	101.1	26.4%
1977	31.1	43.2	72.0%	91.0	34.1%
1976	48.9	59.5	82.2%	104.0	47.0%
1975	25.0	35.6	70.1%	86.1	29.0%
1974	41.6	51.3	81.2%	85.9	48.4%
1973	31.3	39.2	80.0%	73.5	42.5%
1972	12.1	16.4	73.7%	45.1	26.9%
1971	10.3	14.3	71.7%	38.7	26.5%
1970	14.7	18.4	80.0%	44.6	33.0%

Source: Province of Prince Edward Island, Agriculture Statistics and Review of Agriculture for appropriate years.

Table V-2.

SUPPLY AND DISPOSITION OF POTATOES, CROP YEARS 1982-83 TO 1987-88

- 000 tonnes -

Crop Year (1 July-30 June)	Commercial Production[a]	Imports	Total Supply	Exports	Available for domestic use[b]			Farm Price ($/t)
					For Processing[c]	As Fresh[d]	Total	
1982-83	2,252	112	2,364	266	811	1,287	2,098	108.25
1983-84	2,149	145	2,294	261	753	1,280	2,033	161.38
1984-85	2,372	156	2,528	312	767	1,449	2,216	125.71
1985-86	2,510	146	2,656	223	800	1,633	2,433	70-80
1986-87[f]	2,150	150	2,300	220	800	1,280	2,080	120-130
1987-88[g]	2,500	145	2,645	210	800	1,635	2,435	95-105

[a] marketable production

[b] takes no account of waste in the marketing process

[c] Agriculture Canada estimate

[d] potatoes include those used for seed

[e] excludes all subsidy payments

[f] Agriculture Canada projection

[g] Agriculture Canada forecast

Source: Statistics Canada, except as noted.

Table V-3.

SUPPLY AND DISPOSITION OF POTATOES IN CANADA (POTATOES, WHITE[1])

YEAR	Production '000 Tonnes	Beginning Stocks '000 Tonnes	Imports '000 Tonnes	Gross Supply '000 Tonnes	Exports '000 Tonnes	Ending Stocks '000 Tonnes	Net Supply '000 Tonnes	Manufacturing '000 Tonnes	Food Gross '000 Tonnes	Waste '000 Tonnes	Food Net '000 Tonnes	Retail Weight		Fresh Equivalent	
												Kg/ Année	Gr/ Jour	Kg/ Année	Gr/ Jour
1960	1,936.66	546.85	169.01	2,652.52	30.94	630.40	1,991.18	277.33	1,713.86	387.33	1,326.53	74.07	202.93	74.07	202.93
1961	2,000.71	630.40	118.87	2,749.98	102.24	790.70	1,857.04	260.63	1,596.41	400.14	1,196.27	65.47	179.37	65.47	179.37
1962	2,126.35	790.70	80.81	2,997.86	206.52	767.43	2,023.91	259.55	1,764.36	425.27	1,339.09	71.94	197.10	71.94	197.10
1963	2,089.29	767.43	94.17	2,950.90	175.78	832.70	1,942.41	251.56	1,690.84	417.86	1,272.99	67.13	183.92	67.13	183.92
1964	2,146.99	832.70	68.21	3,047.90	217.20	802.72	2,027.98	267.98	1,760.00	429.40	1,330.60	68.86	188.66	68.86	188.66
1965	2,076.82	802.72	67.64	2,947.18	203.46	840.87	1,902.85	289.30	1,613.55	415.36	1,198.19	60.89	166.82	60.89	166.82
1966	2,480.20	840.87	125.71	3,446.77	168.72	1,249.01	2,029.04	275.51	1,753.53	496.04	1,257.49	62.72	171.84	62.72	171.84
1967	2,119.59	1,249.01	92.15	3,460.75	205.72	977.13	2,277.91	275.06	2,002.85	432.92	1,578.93	77.35	211.92	77.35	211.92
1968	2,398.19	977.13	135.59	3,510.91	191.03	1,164.42	2,155.45	276.87	1,878.58	479.64	1,398.94	67.49	184.90	67.49	184.90
1969	2,351.56	1,164.42	102.93	3,618.90	230.17	1,040.54	2,348.19	286.49	2,061.71	470.31	1,591.39	75.68	207.34	75.68	207.34
1970	2,500.34	1,040.54	113.58	3,654.45	215.48	1,241.26	2,197.72	243.58	1,954.14	500.07	1,454.07	68.19	186.82	68.19	186.82
1971	2,219.38	1,241.26	107.83	3,568.47	135.95	1,204.92	2,227.60	221.44	2,006.16	443.88	1,562.28	72.35	198.22	72.35	198.22
1972	1,996.80	1,204.92	118.20	3,319.92	139.19	955.36	2,225.37	236.41	1,988.96	399.36	1,589.60	72.84	199.56	72.84	199.56
1973	2,162.77	955.36	155.49	3,273.62	118.65	945.24	2,209.73	256.37	1,953.36	432.55	1,520.81	68.90	188.77	68.90	188.77
1974	2,506.19	945.24	173.55	3,624.98	151.44	1,265.48	2,208.06	212.53	1,995.53	501.23	1,494.30	66.72	182.79	66.72	182.79
1975	2,198.52	1,265.48	154.07	3,618.07	186.21	1,103.77	2,328.09	214.57	2,113.52	439.70	1,673.81	73.65	201.78	73.65	201.78
1976	2,346.80	1,103.77	225.56	3,676.13	295.20	1,157.79	2,223.14	215.52	2,007.62	469.36	1,538.26	66.83	183.10	66.83	183.10
1977	2,522.06	1,157.79	277.52	3,957.37	220.97	1,333.56	2,402.84	214.57	2,188.27	504.41	1,683.86	72.28	198.03	72.28	198.03
1978	2,513.31	1,333.56	186.71	4,033.58	169.52	1,436.16	2,427.90	225.99	2,201.91	502.66	1,699.25	72.20	197.81	72.20	197.81
1979	2,711.00	1,436.16	187.33	4,394.49	225.47	1,518.45	2,650.57	223.48	2,427.09	554.20	1,872.89	78.80	215.89	78.80	215.89
1980	2,479.47	1,518.45	128.69	4,126.61	309.93	1,384.00	2,432.68	228.24	2,204.44	495.89	1,708.55	70.98	194.47	70.98	194.47
1981	2,682.36	1,384.00	176.72	4,243.08	314.26	1,598.00	2,330.82	216.36	2,114.46	536.47	1,577.99	64.76	177.42	64.75	177.42
1982	2,799.94	1,598.00	141.42	4,539.36	435.05	1,602.00	2,502.31	222.98	2,279.33	559.99	1,719.34	69.72	191.01	69.72	191.01
1983	2,551.80	1,656.61	140.33	4,353.02	341.63	1,477.17	2,534.22	227.79	2,306.43	511.22	1,795.21	72.08			
1984	2,791.25	1,477.17	178.47	4,446.89	329.56	1,665.68	2,451.65	235.96	2,251.07	558.25	1,657.45	65.91			

[1] The waste figure also includes potatoes used for feed. Processed potatoes imports have been converted to fresh equivalent weight

Table V-4.

PER CAPITA CONSUMPTION TRENDS IN POTATOES - KILOGRAMS

YEAR	CANADA WHITE POTATOES	CANADA SWEET POTATOES	U.S.A. WHITE POTATOES	U.S.A. SWEET POTATOES
1967	77.35	0.17	49.26	2.40
1968	67.49	0.18	52.39	N/A
1969	75.68	0.17	53.07	N/A
1970	68.19	0.20	52.98	N/A
1971	72.15	0.22	53.66	N/A
1972	76.62	0.25	53.88	N/A
1973	68.75	0.26	52.57	N/A
1974	66.72	0.33	51.34	2.13
1975	73.65	0.28	54.66	2.13
1976	66.83	0.40	52.21	2.09
1977	72.28	0.35	54.57	1.86
1978	72.20	0.38	54.61	1.81
1979	78.80	0.43	54.25	1.91
1980	70.98	0.41	53.39	1.81
1981	64.76	0.47	51.07	1.72
1982	69.72	0.34	52.43	1.95

Table V-5.

CERTIFIED SEED POTATO ACREAGE - FOR CANADA

1977-1986

PROVINCE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	- acres -									
NEWFOUNDLAND	--	--	11	11	19	25	46	50	57	59
PRINCE EDWARD ISLAND	36,698	42,822	48,986	47,575	49,157	52,693	51,100	55,458	53,604	58,895
NOVA SCOTIA	243	227	290	204	144	130	130	140	72	70
NEW BRUNSWICK	20,873	21,184	19,745	22,745	19,309	20,938	17,529	19,406	24,130	23,500
QUEBEC	1,512	2,167	2,996	3,521	3,241	2,425	3,154	2,482	4,460	5,152
ONTARIO	1,569	1,886	1,915	1,835	1,689	1,278	1,115	1,029	1,462	1,062
MANITOBA	3,151	3,242	3,242	2,894	2,735	2,981	2,632	2,750	3,830	3,822
SASKATCHEWAN	137	141	170	199	254	368	304	415	500	468
ALBERTA	1,265	1,374	1,171	1,187	1,469	1,469	1,756	2,399	4,448	4,495
BRITISH COLUMBIA	1,492	1,230	1,176	964	819	1,019	1,180	1,307	1,645	1,625
CANADA	59,205	52,849	66,940	74,273	79,814	81,317	78,836	83,613	101,440	99,150

Table V-6.

POTATO ACREAGE, YIELD AND PRODUCTION - FOR CANADA

1977-1986

PROVINCE	1977	1978	1979	1980	1981	1982	1983	1984	1985*	1986*
		- acres -								
NEWFOUNDLAND	600	1,120	1,100	1,000	1,000	800	700	700	600	500
PRINCE EDWARD ISLAND	55,000	56,000	61,000	56,000	64,000	69,000	70,000	72,000	73,400	70,000
NOVA SCOTIA	3,800	3,800	3,900	4,000	3,800	4,000	3,900	4,100	4,200	3,900
NEW BRUNSWICK	57,000	58,000	56,000	52,000	54,000	54,000	53,000	54,000	55,000	50,800
QUEBEC	45,000	44,200	44,700	42,000	42,500	44,000	44,000	47,000	47,900	48,886
ONTARIO	48,100	44,400	45,000	40,900	39,100	30,100	38,000	39,400	37,500	32,192
MANITOBA	37,000	37,000	37,000	39,500	40,900	39,500	39,700	40,200	39,500	42,700
SASKATCHEWAN	1,700	2,000	2,200	2,300	2,500	2,600	2,400	2,400	2,700	2,600
ALBERTA	17,000	16,200	17,300	16,300	16,600	18,000	18,500	20,500	23,800	23,500
BRITISH COLUMBIA	11,500	10,300	10,500	9,000	8,700	9,000	9,100	9,100	9,200	8,200
CANADA	276,700	273,020	278,700	263,000	273,100	280,000	279,300	289,400	289,800	279,850
P.E.I. SHARE %	19.9	20.5	21.9	21.3	23.4	24.6	25.1	24.9	25.3	25.0

*Data is area harvested.

Source: Potato Market Review, Agriculture Development Branch, Crop Development Division, Horticultural Section, Agriculture Canada

Table V-7.

POTATO ACREAGE, YIELD, AND PRODUCTION - FOR CANADA, 1977-1986

YIELD IN CWT. PER ACRE

PROVINCE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	- cwt. per acre -									
NEWFOUNDLAND	N.A.	121.4	127.7	92.0	125.0	120.0	130.0	140.0	150.0	145.0
PRINCE EDWARD ISLAND	191.0	221.2	249.1	232.6	253.0	262.4	250.0	265.0	240.0	255.0
NOVA SCOTIA	168.	170.8	182.1	180.0	195.0	200.2	205.0	210.0	190.0	210.0
NEW BRUNSWICK	187.0	211.0	232.4	222.9	245.3	242.3	217.2	220.0	250.0	220.0
QUEBEC	169.5	178.3	204.5	188.1	177.3	194.0	147.8	192.3	211.7	189.4
ONTARIO	181.0	209.0	205.0	197.1	220.0	217.0	195.2	191.0	204.3	228.5
MANITOBA	148.6	183.8	168.0	159.5	168.0	147.0	144.0	145.0	190.0	190.0
SASKATCHEWAN	217.6	211.8	186.0	190.0	155.0	190.0	170.0	190.0	230.0	190.0
ALBERTA	217.6	205.9	225.0	256.0	229.0	235.0	237.8	228.0	240.0	240.0
BRITISH COLUMBIA	191.3	220.0	260.0	240.0	180.0	230.0	220.0	230.0	240.0	260.0
CANADA	197.0	202.8	217.7	206.8	216.6	220.4	201.8	212.6	230.5	222.2

Source: IBID

Table V-8.

POTATO ACREAGE, YIELD, AND PRODUCTION - FOR CANADA

PRODUCTION - 1977-1986

PROVINCE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
					- '000 -					
NEWFOUNDLAND	N.A.	136	140	92	125	96	91	98	90	72
PRINCE EDWARD ISLAND	10,505	12,386	15,195	13,025	16,192	18,109	17,500	19,080	17,616	17,850
NOVA SCOTIA	638	649	710	728	741	801	800	861	798	819
NEW BRUNSWICK	10,659	12,236	13,016	11,589	13,246	13,084	11,513	11,880	15,400	11,176
QUEBEC	7,628	7,888	9,145	7,901	7,535	8,532	6,504	9,039	10,141	9,259
ONTARIO	8,706	9,288	9,225	8,063	8,062	8,485	7,417	7,525	7,660	7,356
MANITOBA	5,498	6,800	6,216	6,301	6,871	5,807	5,717	5,829	7,505	7,790
SASKATCHEWAN	370	424	409	437	388	494	408	456	598	485
ALBERTA	3,699	3,336	3,893	4,173	3,801	4,230	4,400	4,675	4,800	5,400
BRITISH COLUMBIA	2,200	2,266	2,730	2,160	1,653	2,070	2,002	2,093	2,184	2,080
CANADA	54,510	55,409	60,679	54,469	59,154	61,708	56,352	61,536	66,794	62,288
P.E.I. SHARE %	19.3	22.4	25.0	23.9	29.7	29.3	31.0	31.0	26.4	28.6

Source: IBID

Table V-9.

PRINCE EDWARD ISLAND - ACREAGE OF POTATOES BY COUNTY - SELECTED YEARS, 1961-1981

COUNTY	1961	1966	1971	1976	1981
	- acres -				
KINGS	8,610	9,091	7,788	8,081	8,896
PRINCE	23,651	28,999	29,437	32,641	40,185
QUEENS	13,912	14,058	9,527	10,721	14,797
PROVINCE	46,173	52,148	46,752	51,443	63.878

Table V-10.

PRODUCTION OF SEED POTATOES - GRADED STOCK - PRINCE EDWARD ISLAND

1982-1985

VARIETY	1982		1983		1984		1985
	ACREAGE	CWT	ACREAGE	CWT	ACREAGE	CWT	ACREAGE
RUSSET BURBANK	18,993	4,389,553	20,259	4,266,439	21,823	3,848,656	20,452
KENNEBEC	17,380	3,241,308	15,671	3,146,374	15,617	2,587.284	13,679
SUPERIOR	5,080	988,155	4,787	794,914	5,946	953,291	6,182
SEBAGO	8,080	1,522,980	6,827	1,206,166	7,607	1,199,238	7,185
RED PONTIAC	1,276	285,748	1,358	238,691	1,415	264,634	1,512
SHEPODY	684	146,430	941	157,856	1,398	277,832	2,449
KATAHDIN	111	16,293	64	10,904	*	86	*
NORCHIP	118	25,243	111	18,853	128	19,756	298
ATLANTIC	163	30,034	247	43,394	409	80,828	435
CHIEFTAIN	140	33,384	215	43,981	231	53,128	157
BINTJE	128	29,812	193	36,460	217	34,575	207
GREEN MOUNTAIN	221	44,949	141	25,907	204	34,448	177
IRISH COBBLER	55	9,936	58	7,016	99	11,059	68
CHEROKEE	30	4,750	32	5,660	40	7,535	32
BELLE ISLE	49	6,811	25	3,420	*	36	2
OTHER	215	43,088	171	28,874	324	52,476	472
TOTAL	52,694	10,818,474	51,100	10,034,929	55,458	9,374,868	53,252

* LESS THAN 1 ACRE.

Table V-11.

ACREAGE OF SEED POTATOES - GRADED STOCK - PRINCE EDWARD ISLAND 1979-1985

VARIETY	1979	1980	1981	1982	1983	1984	1985
	- acres -						
RUSSET BURBANK	13,175	15,728	15,627	18,993	20,259	21,823	20,452
KENNEBEC	15,923	14,589	16,309	17,380	15,671	15,671	13,679
SUPERIOR	3,852	5,108	5,315	5,080	4,787	5,946	6,182
SEBAGO	13,306	9,533	8,881	8,051	6,827	7,607	7,185
RED PONTIAC	1,475	1,730	1,673	1,276	1,358	1,415	1,512
SHEPODY	0	27	217	684	941	1,398	2,449
KATAHDIN	86	119	67	111	64	0	*
NORCHIP	684	237	166	118	111	128	298
ATLANTIC	0	5	79	163	247	409	435
CHIEFTAIN	17	124	109	140	215	231	157
BINTJE	0	3	30	128	193	217	207
GREEN MOUNTAIN	198	195	215	221	141	204	177
IRISH COBBLER	64	82	67	55	58	99	68
CHEROKEE	0	50	27	30	32	40	32
BELLE ISLE	49	52	52	49	25	0	2
HUNTER	12	10	35	29	30	26	*
OTHER	145	195	288	186	141	298	472
TOTAL	48,986	47,757	49,157	52,694	51,100	55,458	53,252

Table V-12.

PERCENT OF THE U.S. FALL POTATO CROP MOVED BY MONTH, 1983-1984

1983-84	MAINE	IDAHO	WISCONSIN	MINNESOTA	WASH.	N.DAKOTA	OREGON	NEW YORK
	- per cent -							
TO NOV.30	19	27	47	11	48	26	35	51
DECEMBER	10	8	11	12	6	12	10	13
JANUARY	12	8	8	15	9	11	8	15
FEBRUARY	11	7	7	15	7	11	10	7
MARCH	14	9	8	17	9	16	9	7
POST-MARCH	34	41	19	30	21	24	28	7

Table V-13.

PERCENT OF THE CANADIAN POTATO CROP MOVED BY MONTH, 1984-1985

1984-85	P.E.I.	N.S.	N.B.	QUE.	ONT.	MAN.	SASK.	ALTA.	B.C.
	- per cent -								
TO OCT.31	11	51	28	40	43	8	19	28	51
NOVEMBER	10	3	8	6	9	10	7	6	11
DECEMBER	13	6	7	6	7	10	7	8	5
JANUARY	12	4	7	10	6	11	9	9	6
FEBRUARY	9	5	7	6	9	10	7	9	6
MARCH	10	7	12	7	5	8	15	13	6
APRIL	12	2	11	6	8	16	21	9	11
MAY	23	22	20	19	13	26	14	18	2
YEAR	100	100	100	100	100	100	100	100	100

Table V-14.

PERCENTAGE OF THE P.E.I. POTATO CROP MOVED BY MONTH, 1983-84

1983-84	TABLE	SEED	OTHER	TOTAL
	- per cent -			
TO OCT.31	16	16	15	16
NOVEMBER	17	9	5	13
DECEMBER	12	21	4	11
JANUARY	11	18	5	10
FEBRUARY	10	10	5	8
MARCH	10	10	5	9
APRIL	10	14	5	10
MAY	9	2	46	18
JUNE	5	0	5	4
JULY	0	0	6	2
YEAR	100	100	100	100

Table V-15.

CANADIAN TABLE POTATO EXPORTS BY COUNTRY OF DESTINATION - 1979-1985

CROP YEAR	1979	1980	1981	1982	1983	1984	1985
	- cwt. -						
ST PIERRE	7,584	4,893	7,153	7,128	5,157	3,968	5,171
MEXICO	83	0	0	0	0	6,753	0
ANTIGUA	1,955	3,169	3,560	2,500	1,350	0	0
BAHAMAS	496	1,400	438	2,508	3,385	425	1,025
BARBADOES	101,353	67,626	89,098	56,279	155,983	153,175	178,758
BERMUDA	3,866	673	1,938	1,638	2,665	0	6,589
DOM. REP.	550	200	0	0	0	0	0
GRENADA	163	0	0	460	100	0	0
JAMAICA	0	0	0	2,226	0	0	16,550
MARTINIQUE	0	75	0	0	0	0	200
PUERTO R.	0	0	108,641	125,808	51,532	75,543	98,650
ST KITTS	4,220	1,900	1,350	1,000	1,475	0	0
ST LUCIA	1,995	600	0	200	450	0	0
ST VINCENT	3,249	1,413	550	0	250	0	0
TRINIDAD	496,197	279,024	406,132	476,581	425,672	450,281	428,502
WEST. IND.	0	100	1,168	225	450	1,700	575
ARGENTINA	0	83,600	0	0	0	0	0
VENEZUELA	167,975	0	162,886	0	0	0	0
ICELAND	0	0	0	0	18	0	0
FINLAND	0	0	26,400	0	0	0	0
NORWAY	0	0	0	0	1,251	0	450
SWEDEN	0	0	0	0	96,874	2,420	5,979
BELGIUM	77,000	0	0	0	0	376	0
ALGERIA	437,361	0	0	422,011	409,400	0	0
JORDAN	0	0	22,000	0	0	0	0
KUWAIT	0	0	0	0	400	2,200	0
WEST GERMANY	0	0	0	0	0	250	3,623
FRANCE	0	0	0	0	0	1,853	0
U.S.A.	1,131,333	2,351,555	3,270,386	2,586,468	1,892,615	3,747,828	2,498,066
TOTAL	2,435,380	2,796,228	4,101,700	3,685,032	3,049,027	4,446,772	3,244,144

Table V-16.

P.E.I. TABLE POTATO EXPORTS BY COUNTRY OF DESTINATION - 1979-1985

CROP YEAR	1979	1980	1981	1982	1983	1984	1985
				- cwt. -			
ST PIERRE	5,960	3,388	6,714	5,066	3,011	3,300	4,800
ANTIGUA	1,295	3,169	3,560	2,500	1,350	0	4,000
BAHAMAS	0	1,000	0	0	0	0	0
BARBADOES	101,353	67,626	88,675	56,279	137,480	107,400	144,300
BERMUDA	3,866	673	1,938	1,638	2,465	6,800	4.600
PUERTO RICO	0	0	70,509	81,323	16,860	40,900	15,100
DOM. REP.	550	200	0	0	0	0	0
GRENADA	108	0	0	0	100	0	0
ST KITTS	3,427	1,900	1,350	1,000	1,475	0	0
ST LUCIA	1,720	600	0	200	450	0	0
ST VINCENT	2,955	1,413	550	0	250	0	0
TRINIDAD	496,197	279,024	406,132	475,981	369.559	401,300	311,000
ICELAND	0	0	0	0	18	0	0
FINLAND	0	0	26,400	0	0	0	0
NORWAY	0	0	0	0	1,251	0	450
SWEDEN	0	0	0	0	96,874	1,500	5,500
VENEZUELA	167,975	0	162,886	0	0	0	0
WEST. IND.	0	0	758	0	0	900	1,700
JORDAN	0	0	22,000	0	0	0	0
BELGIUM	77,000	0	0	0	0	400	0
ARGENTINA	0	83,600	0	0	0	0	0
ALGERIA	437,361	0	0	422,011	409,400	0	0
KUWAIT	0	0	0	0	400	2,200	0
FRANCE	0	0	0	0	0	200	0
WEST GERMANY	0	0	0	0	0	1,900	3,600
U.S.A.	248,689	826,619	1,164,692	1,166,550	1,018,697	1,587,400	746.700
TOTAL	1,548,456	1,269,212	1,929,764	2,212,548	2,058,639	2,154,200	1,239,300

Source: Agriculture Canada, Fruit, Vegetable, and Honey Crop and Market Report

Table V-17

CANADIAN SEED POTATO EXPORTS BY COUNTRY OF DESTINATION - 1979-1985

CROP YEAR	1979	1980	1981	1982	1983	1984	1985
				- cwt. -			
BERMUDA	2,789	2,554	2,457	3,789	3,823	2,178	3,225
CUBA	247,801	315,117	277,589	266,911	392,944	289,955	365,945
ST. KITTS	15	0	0	83	0	0	0
JAMAICA	47,470	26,391	24,400	33,867	11,249	10,588	12,053
VENEZUELA	370,796	519,832	510,440	390,613	463,854	409,830	380,592
URUGUAY	324,353	295,733	313,432	140,628	224,070	265,205	173,346
ARGENTINA	685,872	410,692	59,950	36,960	30,356	4,426	12
ITALY	187,770	0	149,776	122,738	177,342	116,798	149,013
GREECE	95,700	67,760	58,300	70,400	52,470	23,320	36,253
ALGERIA	66,000	129,730	0	88,000	264,114	270,292	0
DOM. REP.	32,318	22,788	2,200	990	0	3,520	13
PORTUGAL	40,810	132,590	182,178	242,237	169,182	214,435	83,692
SPAIN	67,058	115,870	128,748	161,733	128,135	141,099	35,072
THAILAND	882	0	0	0	0	0	0
PUERTO RICO	2,702	13,276	33,869	0	0	0	0
COSTA RICA	1,371	0	0	0	0	0	5
PANAMA	1,260	840	2,519	6,160	6,156	447	636
BRAZIL	0	605	832	6,600	4,950	2,046	0
NICARAGUA	0	0	0	3,298	1,351	4,225	1,352
JORDAN	0	0	0	0	330	902	4,406
BARBADOS	0	0	433	0	0	0	1,323
EGYPT	0	1,100	1,100	0	0	0	1,459
HUNGARY	0	528	0	931	0	7	0
OTHERS	0	0	0	0	0	589	50,628*
U.S.A.	528,294	1,352,731	1,198,862	619,775	568,514	963,381	770,552
TOTAL	2,703,261	3,418,137	2,947,085	2,195,713	2,498,840	2,723,243	2,069,577

* 42,297 cwt. were shipped to Turkey in 1985-86.

Table V.18

P.E.I. CERTIFIED SEED POTATO EXPORTS BY CUNTRY OF DESTINATION - 1979-1985

CROP YEAR	1979	1980	1981	1982	1983	1984	1985
	- cwt. -						
BERMUDA	1,023	1,842	1,497	2,476	2,565	1,800	2,800
PUERTO RICO	0	370	0	0	0	0	0
DOM. REP.	24,105	22,788	0	990	0	3,500	0
CUBA	20	0	0	0	100,232	200	0
JAMAICA	20,001	26.301	2,750	1,701	0	9,700	0
PANAMA	0	0	0	6,160	6,156	400	0
URUGUAY	237,567	295,733	265,232	140,628	221,716	265,000	155,000
VENEZUELA	370,796	499,440	510,440	390,613	463,854	409,800	380,500
GREECE	94,600	67,760	58,300	70,400	52,470	23,300	36,100
JORDAN	0	0	0	0	330	900	4,400
ITALY	187,770	0	149,776	59,400	177,342	116,800	131,400
ARGENTINA	224,220	300,472	11,000	36,960	30,356	4,400	0
BRAZIL	0	0	260	6,600	4,950	2,100	0
ALGERIA	66,000	129,730	0	88,000	264,114	270,292	0
EGYPT	0	1,100	1,100	0	0	0	1,400
PORTUGAL	40,810	132,590	182,178	242,237	169,182	214,300	87,700
U.S.A.	227,795	603,055	438,057	125,488	136,635	421,100	140,500
HUNGARY	0	264	0	931	0	0	0
SPAIN	55,880	85,303	89,082	115,830	121,183	140,300	30,500
THAILAND	882	0	0	0	0	0	0
LEBANON	0	0	0	0	0	200	0
TURKEY	0	0	0	0	0	0	49,300
TOTAL	1,551,469	2,166,838	1,709,672	1,288,414	1,642,775	1,527,600	1,016,400

Source: IBID

Table V-19.

WORLD POTATO PRODUCTION - 1973-1982

COUNTRY	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
	- million of metric tonnes -									
U.S.S.R.	108.0	81.0	88.7	85.1	83.7	86.1	90.0	67.0	72.0	78.0
POLAND	51.9	48.5	46.4	50.0	41.1	46.6	50.0	26.4	24.6	32.0
CHINA	36.0	38.0	40.0	12.0	12.0	12.5	12.5	15.5	15.5	15.0
GERMANY, E.& W.	25.1	28.0	18.5	17.5	21.7	21.3	19.7	15.9	18.0	16.8
UNITED STATES	13.6	15.5	14.5	16.2	16.1	10.6	15.5	13.7	15.4	15.8
INDIA	4.5	4.9	5.2	7.4	7.2	8.1	10.2	8.3	9.6	9.9
FRANCE	7.3	7.5	7.2	4.3	7.8	7.5	7.1	6.6	6.5	6.8
U.K.	7.1	7.2	4.6	4.8	6.6	7.3	6.5	7.1	6.2	6.6
NETHERLANDS	5.8	5.6	5.0	4.7	5.8	6.2	6.2	6.3	6.4	6.2
SPAIN	5.6	5.7	5.2	5.6	5.5	5.5	5.2	5.7	5.5	5.1
CANADA	2.2	2.5	2.2	2.3	2.5	2.5	2.8	2.5	2.6	2.8
OTHERS	51.7	55.5	50.6	56.9	57.8	63.7	58.5	56.3	59.5	61.9
WORLD	318.75	299.82	289.17	266.94	267.73	277.87	284.2	231.3	259.8	256.9